# Remarks
ON
# APPENDIX DYSPEPSIA.

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THE term "dyspepsia" was used by the older writers to indicate a variety of conditions, believed to be always functional in character, in which disturbances of "digestion" were the main features. If the older works on medicine, such as Budd's, Trousseau's, Brinton's, and Sir Thomas Watson's, are consulted—and this may profitably be done, and will indeed prove a delightful and absorbing recreation—it is seen that a considerable space is devoted to a description of the various forms of "dyspepsia." The work of the surgeon, human vivisector as he is, has enabled him to make an intimate study of the "Pathology of the Living," and has newly conferred upon him the power of discovering that the term "dyspepsia" has been used to denote a group of symptoms which can now positively be ascribed to demonstrable lesions in other organs than the stomach. The "acid dyspepsia" in its characteristic, protracted and recurrent form is recognized as being due to a duodenal ulcer; the "flatulent dyspepsia," when severe, persistent, and repeated, is frequently due to stones lying within the gall bladder.

In the vast and unexplored territory formerly known by the name "dyspepsia" certain areas have been carefully surveyed and their exact features determined and accurately recorded. But the area still awaiting the intrepid discoverer is enormous; indeed the work already accomplished seems little more than a beginning. That beginning has, however, been made with sedulous care, and the clinical results which have accrued are indeed most satisfactory, and are an inspiration and incentive to further research. So is the prophecy of Brinton being realized, who wrote fifty years ago:

> As the progress of scientific medicine has gradually revealed the morbid anatomy of the digestive canal, and thus detected structural disease with increasing accuracy and frequency, the vague (but useful) term "dyspepsia" has acquired a continually more restricted meaning. Nor can we doubt that it is destined to still further limitation; and that, as advancing knowledge brings us better means of investigation, and so enables us to discover and distinguish structural changes of which we now can only observe the functional results, the aggregate of maladies called dyspepsia must undergo successive subtractions, tending more or less completely to its total subdivision into special maladies, and to the removal of this term from our nosology.

During the last few years I have been brought by degrees to recognize that in many of the intractable cases of indigestion, where a lesion of the stomach, duodenum, or gall bladder might not unreasonably have been supposed to exist, no structural alteration could therein be found. On further investigation an appendix, obviously diseased, was discovered, and its removal was quickly followed by a complete relief of all former disabilities. This experience did not come in any degree as a surprise, for I had long recognized that the "bilious attacks" of children, the sharp abdominal pain, headache, vomiting, languor, and brief malaise, often associated with constipation, and ascribed to an unwholesome meal, culminated sometimes in a flagrant and obvious attack of acute appendicitis for which an operation, then or in a later stage of the disease, was performed. After the loss of the appendix no more is heard of the "bilious attacks," which before have been so frequent. When I am now told, in a case of acute appendicitis in a child, that there has been this earlier history, I am accustomed to predict that the future will be free from these troublesome complaints.

The close investigation of the anamnesis of the cases to which I am now anxious to call attention reveals the fact that there are several types of "appendix dyspepsia," types which differ from one another in some striking particulars, but which yet resemble one another in many conspicuous features.

In what is, perhaps, the most interesting group of all these there is a very close mimicry—indeed, very often an exact reproduction—of those symptoms which have long been attributed to "gastric ulcer." The symptoms are pain, which comes on soon after food, usually within half an hour to one hour, but sometimes later, sometimes earlier, and usually with caprice. There is here no fixed interval of relief after a meal, as is constantly the case in chronic gastric ulcer. The patient will say that the pain comes "at any time" after a meal. The pain is epigastric; it is rarely felt elsewhere, though it may spread over the abdomen to one or both sides, or, rarely, to the back; pressure often gives great relief to it for the moment. It is always worse on exertion and after exercise; a game of golf, an evening's dance, a day's hard physical work will always excite the pain or increase the severity of that which food has caused. Flatulence, the belching of gas, and sour eructations may all be present, and vomiting is not infrequent. In the vomited matter and in the contents removed from the stomach after a test meal there may be an increased amount of free hydrochloric acid. Epigastric tenderness is sometimes, indeed generally, present, and in two recent cases of my own was well marked beneath the left costal arch, so that, in both cases, I had been led to diagnose an ulcer on the lesser curvature of the stomach. Tenderness is not present in any other part of the abdomen, though it is a frequent experience to find that the patient complains of epigastric discomfort, his "usual pain," he may say, when pressure is made over the appendix. Nausea is not infrequent, and haematemesis may occur. In perhaps a dozen cases of my own the haemorrhage from the stomach has been considerable—that is to say, a quantity in excess of a pint has been vomited at once. In one case I visited the patient at her own home with her medical attendant, and we saw that about 3 pints of blood had been vomited in twenty-four hours. Patients who suffer from these symptoms are said to have "gastric ulcer"; indeed, no other diagnosis would seem permissible or possible to the majority of physicians. The symptoms, in nature and degree, are those which would satisfy the most exacting German clinician. After the "attack" has passed away the patient's health may greatly improve, but there is never the same absolute return to complete unthinking health as is seen in cases of duodenal, and less commonly of gastric, ulcer. There is always, I find, epigastric uneasiness, some concern as to the quantity or quality of the foods to be taken, and red meat especially seems to be avoided by many patients. The regurgitation of bitter fluids and a burning of the throat are taken to indicate a persistent acrimony of the gastric contents. The exacerbation in the symptoms which is described by the patient as an "attack" may occur infrequently or at short intervals. Something depends on the nature of the life the sufferer leads, but more upon the care with which food is taken. It is quite common to hear that the first attack occurred "when I was quite a child"; ages of 7, 11, 15, and so on have been given to me as indicating the time of the first onset of indigestion. Sometimes, though this is quite exceptional, the beginning is made to date from an acute illness, which inquiry may indicate as having been due to appendicitis. In by far the great majority, however, the onset is insidious, its exact beginning unknown, and its earlier developments imperfectly remembered.

The complete clinical picture, it will be seen, suggests a diagnosis of gastric ulcer; but close inquiry discovers some discrepancy. In gastric ulcer there is order and method, as an almost invariable rule, in the appearance of the symptoms; in the condition I describe there is caprice. In gastric ulcer there is frequently a seasonal variation—an improvement in warm weather, a special liability to chills, or damp, or colds. There is, moreover, a tendency for exercise and fresh air to relieve the symptoms. In "appendix dyspepsia" there is no note of seasonal differences, and exercise always makes the condition worse. Vomiting in cases of chronic ulcer, whether of the stomach or of the duodenum, is infrequent; in many cases of appendix dyspepsia it is the most constant of all symptoms. It occurs for long periods after each meal, generally one or two hours after the meal has ended, and it is the one conspicuous means by which relief from pain or distress is obtained. The amount of food returned is always small, but on the instant of its regurgitation some release from pain, fullness, or discomfort is experienced.

In several of my cases a diagnosis of gastric ulcer has been made by one or more physicians, and patients have been in the medical wards of hospitals or in private homes to undergo a rest cure, with the limited dietary and rectal feeding, in the orthodox way. One patient, a private case, had three such courses of treatment for "gastric ulcer," the last of which endured ten weeks.

I hold it to be axiomatic that if a gastric ulcer has produced symptoms of a severe character over a period of years, 5, 10, 15, 20, or more, the ulcer is one which will have reached the serous coat, and will have so involved the wall of the stomach as to make the ulcer palpable, visible, and demonstrable.

On opening the abdomen of a patient whose type-history I have described, no flaw can be discovered in the stomach even after the most minute and most meticulous care has been expended. There is no thickening, no whiteness, no puckering, no adhesion. The stomach looks in every particular quite normal. But if it be allowed to lie quietly for inspection (and it is better to watch it while the abdominal wall is raised up, before the organ is handled) a most interesting condition is displayed. The stomach in its pyloric half is seen to be in vigorous and excited action. At the point where the vertical and horizontal parts of the stomach merge a contraction starts and spreads towards the pylorus, and at last involves all the pyloric antrum. The stomach becomes thick, contracted and pale; its muscle is evidently in a state of strained and vigorous action, and the channel through it is almost obliterated. On the cardiac side of this area of spasm the stomach is quiet, a little distended even, and shows no movement. I described this condition for the first time in 1904[1] in the following words:

> On several occasions during the last few years I have watched the stomach intently for several minutes, and have seen the onset, the acme, and the gradual relaxation of a spasmodic muscular contraction in its walls. Quite gradually the stomach narrows, and the wall becomes thicker and almost white in colour; when taken between the fingers the contracted area feels like a solid tumour. The spasm may be so marked as to prevent a finger being invaginated through the segment affected. The appearance presented is very striking. I have seen it in the body of the stomach and at the pylorus, but never at the fundus. As slowly as it comes on the spasm quietly relaxes, and the stomach assumes its usual form.

When this condition is seen it may be predicted that a lesion will be found in the appendix. As Bishop Butler tells us, "probability is the very guide of life," and the appendix is selected as the seat of an organic lesion in such a prediction because it is found to be the cause of a "pyloro-spasm" far more frequently than any other part. The symptoms in the condition I have described are referred to the stomach, I believe, partly on account of the turbulent condition of muscular over-action at the pyloric portion of the organ. What is the reason for this spasmodic contraction? The explanation is to be found in the work of Pawlow, Starling, and Cannon. Pawlow demonstrated that the action of the pylorus was controlled by stimuli excited both on the gastric and on the duodenal side. On the gastric side an acid reflex causes the pylorus to open, and at the moment when, by a series of rhythmical contractions, the muscular wall of the pyloric antrum has squeezed a portion of the prepared contents onwards to this point. A jet of acid chyme is projected into the duodenum and there sets up at once a reflex, which closes the pylorus until the acidity is neutralized by the alkaline juices poured out through the bile papilla (bile and pancreatic juice). The pylorus is kept closed until the change in the condition of the duodenal contents gives the signal for its release.

W. B. Cannon and F. T. Murphy[2] in a most interesting article describe a series of experiments carried out upon cats. In the cat, ordinarily, food begins to leave the stomach within ten minutes of ingestion, as is shown by examination with *x*-ray screen after an opaque food (bismuth and potato) has been given. After a high intestinal operation—an end-to-end anastomosis, for example—the food begins to leave the stomach only after five or six hours. The delay is not due to etherization or to division of the abdominal wall; it is dependent upon an alteration in the action of the pylorus. After the operation peristaltic waves are seen to be coursing regularly over the stomach to the pylorus, precisely as they do in health. The difference is in the fact that the pylorus refuses to relax. Cannon and Murphy then show that the protective mechanism of the pylorus is beautifully proportioned to the needs of the intestine, for it is exerted during almost precisely that period (six hours) which is necessary for the repair of the intestinal injury. The function of the pylorus would, then, appear to be this: That, being controlled by stimuli aroused both on its proximal and distal sides, the distal stimulus, undoubtedly the more important, in altered conditions of the intestine, may be so insistent that relaxation is prevented and a firmer action is excited. The pylorus, that is to say, acts as a guard to the bowel distal to it, and it is probably true to say that its protective control extends to the whole of the mid-gut.

The occurrence of haemorrhage, even profuse and recurrent haemorrhage, in these cases of "appendix dyspepsia" is at first thought difficult perhaps to understand. But it is an observation which has often been made in the *post-mortem* room that patients may bleed to death without any lesion being discoverable in the stomach, and a large number of cases are recorded by surgeons in which an earnest search in the interior of a stomach from which blood has freely poured has failed to disclose any breach in the continuity of the mucosa. In many instances the stomach is said to be bleeding from many tiny points—the mucous membrane is weeping blood. Unfortunately in these cases no special attention seems to have been paid to the intestine and appendix. Haemorrhage we know may be excited by causes which do not leave any mark upon the stomach wall. Post-operative haematemesis, for example, as described by von Eiselsberg in 1899, may follow abdominal operations, and may prove fatal after hernia operations and the like, and yet no gross lesion of the stomach can be seen. And in a certain proportion of cases of acute appendicitis and of acute cholecystitis I have known haematemesis usually slight, but rarely severe, to occur. Exactly how the haemorrhage is caused does not seem clear; it may be sepsis, as Rodman suggests, or embolism of the artery of the stomach secondary to thrombosis in the omental branches, as von Eiselsberg considers possible, or to toxic influences which we do not at present understand; but the fact that gastric haemorrhage can occur in association with acute intestinal lesions does not admit of doubt. It is interesting to consider whether it is possible that the condition produced in the stomach which leads to the haemorrhage, being itself the result of an inflammation in the appendix, may not be the initial stage in the development of an ulcer in the stomach; the area involved in the production of the bleeding having its resistance so lowered that the gastric juice is able successfully to attack it. That acute ulceration of the stomach (a lesion in which there is destruction only of the mucosa, the serosa being unharmed) occurs in intestinal lesions—for example, typhoid fever, and in acute specific fevers—is well known. The lesion is probably toxic, as the work of Turck suggests, but is possibly of an infective origin. It is accordingly not improbable that in some cases of haematemesis due to appendicitis, a structural lesion may be present in the stomach. But in the cases to which I desire especially to draw attention the stomach is healthy, the appendix alone is diseased.

In a brief but most interesting article,[3] Dr. Hale White asks the question: "Are not some patients said to be afflicted with gastric ulcer really suffering from a different disease?" In this paper he relates many instances in which a diagnosis of ulceration of the stomach had been made, in which also haematemesis had occurred when no perceptible lesion was present. The answer I would suggest to the question is: "Yes, they are suffering from appendicitis." The following cases may be quoted as examples of this form of the disease:

CASE I.

Mrs. H., aged 52, sent by Dr. Ellis, Halifax, for at least twenty years has been liable to "bilious attacks" accompanied by severe headache and dizziness. At first symptoms consisted of a feeling of epigastric discomfort and pain coming on about one hour after food, frequently followed by the vomiting of a few mouthfuls of food and mucus which gave relief. These attacks used to come on at intervals of about a month, and varied in severity and duration. Sixteen years ago a severe illness (rheumatic fever) accompanied by much vomiting.

Twelve or fourteen years ago very severe attack accompanied by vomiting of dark fluid, probably altered blood. Seven years ago hysterectomy was performed by Mr. Moynihan, and since

that time the attacks have been more frequent and more severe. Pain, she states, has come on from half an hour to one hour after food. There is at first a feeling of tightness in the chest, which is followed by pain in the epigastrium and round both costal margins, passing to between the shoulders; this is accompanied by distressing flatulence and belching and followed by vomiting; the vomited material recently has consisted mainly of bile, and sometimes has been considerable in quantity. The pain is relieved by vomiting, and if this does not occur usually diminishes before the next meal. In the intervals between the attacks she has been fairly well, and has managed to do her house work, although she has been compelled to limit her diet very much, and has lived mainly on slops, Benger's food, etc.

Seven weeks ago a severe attack; was kept in bed on fluids for three weeks, and then an attempt was made to start solids again, but this brought a recurrence of pain and a return to fluid food was made. Has lost weight considerably during last twelve months.

*On Examination.*

A rather thin woman. No tumour palpable; stomach slightly dilated; some tenderness on pressure below and to right of umbilicus.

*Operation, January 31st, 1909.*

Stomach, duodenum, and gall bladder normal. Appendix long and showing several diverticula (?) near its tip; no adhesions. Appendicectomy.

*Pathological Report: Appendix.*

The specimen is an appendix measuring 3½ in. by ¼ in. At a point ¼ in. from the tip is a small excrescence about ¼ in. in diameter. Around this excrescence and extending over this lower third of the surface of the appendix the vessels are dilated, congested, and tortuous. On splitting open the specimen the lumen was found to be patent for only 1 in. from the severed end. This portion was covered with mucous membrane and not injected; the lower 2½ in. formed a solid fibrous cord. A piece from the tip was removed for microscopical examination.

Microscopical sections of the nodule show that it is a small fibro-myoma. There is no trace of any glandular epithelium or lymphoid tissue in the sections. At the edge of the section and at the foot of the small excrescence is a strip of necrotic tissue which suggests that the tortuous vessels may have been thrombosed.

Dr. Ellis writes on December 2nd: "I have seen Mrs. H. today. She has gained 12 lb. in weight. She is quite well, and has no pain."

CASE II.

M. C., aged 54. Twenty years ago he began to have indigestion—that is, a certain amount of discomfort after food, with the bringing up of wind and a little mucus; there was never anything he could call pain. Eighteen years ago he had mucomembranous colitis occurring in spasms lasting three or four days each; each attack was caused immediately by worry and strain, both mental and bodily. He has never vomited. His complaint is chiefly that, after food, at a time from a few minutes to an hour or so, he begins to have discomfort, flatulence, bringing up wind and passing it downwards, and occasionally he eructates a little acid mucus. At no time has he had acute pain. Food does not relieve him, but dry food suits him the best. (For eighteen months he has had a morning cough and a chronic pharyngitis.) Six years ago he was in hospital in Glasgow, and had his stomach washed out regularly for dilatation. He has never had jaundice or anything to suggest gall stones.

He has been under the care of a large number of doctors, some have told him his stomach was dilated, others have said the trouble is in his lungs.

He has seen specialists for his throat, and they say his stomach is the primary cause. He says the right lower half of his abdomen has always been sensitive to touch; on pressure there he complains of epigastric pain.

*Operation.*

Incision through right rectus below umbilicus. Appendix found tied tightly down to the brim of the pelvis and tautly stretched. At its termination it was slightly clubbed and firmly adherent. It was 3 in. in length, and the surface was covered with minute excrescences of a paler colour. Appendicectomy performed. There were several caseous glands along the ileo-colic artery. The appendix showed on subsequent examinations chronic inflammation in all its coats. The distal end was greatly thickened and the cavity dilated. There were many diverticula. The patient experienced relief almost at once, and has taken food better and with greater comfort than he did for years before.

CASE III.

C. N., female, aged 25, admitted July 21st, 1909. Eight years ago began to suffer from anaemia and indigestion. Pain and a sense of heaviness came on soon after food, occasionally vomiting occurred, and always gave relief. After a few months vomiting became frequent, and after a hearty meal some return of food was always observed. At first there were exacerbations, usually about three a year, when the pain and vomiting became much more severe. Five years ago in a very severe attack she vomited blood twice or thrice. She was then in bed for seven weeks. Four years ago haematemesis occurred again more profusely, and she underwent a "cure" of ten weeks' duration in which she was treated by restriction of the diet and nutrient injections. She was in hospital for five weeks. After this she was easier for a few weeks, but the symptoms then returned and continued up till March, 1909. Then a much more severe attack of haematemesis occurred, and she was in bed under treatment for nine weeks. The pain comes on either immediately after food or within half an hour; it is sometimes "gnawing," or there is a "feeling of distension and weight." The pain lasts one to two hours, is always relieved by vomiting, and is always made worse by more food. During all these years constipation has been severe, and enemata are given regularly. On examination there was slight dilatation of the stomach and some tenderness in the epigastrium. Pressure in the right iliac region caused epigastric pain. At the operation no lesion was found in the stomach, duodenum, or gall bladder. The appendix was sharply kinked and firmly adherent in its proximal part. It was removed, and the pathologist reported "examination shows the mucosa to be thickened all the length of the appendix, and there is a small old haemorrhage half way along the length of the tube. There is marked inflammatory infiltration of the submucosa." Within a few days of the operation the patient began to ask for more food, and has since eaten well with absolutely no discomfort. She had not been free from symptoms for more than a "few days" for seven years.

**In a smaller number of cases a distant or a close resemblance to the symptoms of duodenal ulcer may be present. The patient then complains of pain coming usually one to three hours after a meal, not constantly, but capriciously. There is complaint of flatulence, belching, some acidity, and constant epigastric or general abdominal discomfort. The symptoms extend over many years, and in some degree are always present. A good example is the following:**

CASE IV.

W. W., aged 28. For several years has had "indigestion"—he thinks it dates from an attack of pain which woke him up in the middle of the night when he was 12 years of age. He has pain usually late in the mornings, at 11 or 11.30, and again at about 8 p.m. At these periods, about two to three hours after a meal, he begins to feel "blown out" and "as if he would burst"; sour and acid eructations occur, and sometimes vomiting, which always brings relief. If he empties the stomach by vomiting, he feels ease at once, and is able to take another meal in a few minutes. He has not found that dieting makes much difference to his symptoms; if anything, he is rather easier if he keeps to fluids. Appetite is good, so he prefers to eat a good meal and let some of it return if he gets uneasy. He has only been wakened twice by the pain in the night; on both occasions it was very severe, and was referred to the epigastrium; brandy relieved it in a few minutes. On both occasions he was able to go to work the next morning. He is anxious to have relief by some means, as he is "never comfortable."

At the operation an incision through the right rectus at the umbilical level revealed no structural alteration in stomach, duodenum, or gall bladder. A very well-marked pyloro-spasm was watched for three or four minutes. The appendix was found very firmly bound down to the iliac fossa for one inch after leaving the caecum; this portion was narrow, thin, and compressed. Beyond the adhesion the appendix was greatly distended, full of cheesy faecal material, containing seven concretions, and the walls were "as thick as the small intestine." The pathologist reported that the submucous coat was densely infiltrated throughout with inflammatory cells. There was no ulceration. The contrast between the thin compressed portion of the appendix and the distal free portion was very evident.

**In this case the diagnosis of appendicitis had been made, but in an earlier case I had made a diagnosis of duodenal ulcer, and had found as the solitary organic lesion an appendix firmly adherent. The patient was a lady whom I saw with Dr. Godfrey of Scarborough. Both he and I and a well-known London physician had concluded, after hearing the detailed history, that the case, by reason of the long persistence and severity of the symptoms, was one for which surgical treatment should be adopted. The usual incision for the performance of gastro-enterostomy was made, and at once a busy contortion of the pyloric antrum was evident. I knew what this meant, and after displaying a healthy stomach, duodenum, and gall bladder, I verified my instant prediction and exposed a thick white appendix, the seat of ancient disease, firmly bound down by many complex adhesions.**

**The following is another case in which there is some resemblance to the symptoms of duodenal ulcer:**

CASE V.

E. M. H., female, aged 42, seen with Dr. H. J. Roper. Patient admitted complaining of pain in the body and indigestion. She is a woman of medium build, looks a little pinched about the face, but does not think she has lost much weight recently. She has had a dietary treatment for some time. No signs of

jaundice. There is a moderate amount of fat about the body wall.

Up to three years ago was perfectly well and never complained of indigestion in any form. Three years ago she began to have "indigestion" or "trouble in the body." This came on when she was in bed at night, generally about 10.30 p.m., and she generally took her last meal about 8.30 p.m. She did not complain of a great pain, but rather of an uneasiness and abdominal discomfort with a blown up feeling and tightness. There were no vomiting and no sour eructations. This condition lasted about six months, and during that time the "indigestion" got slightly worse. Then for six weeks patient took to her bed complaining of acute pain. The pain seems to have been nearly always present, but at night time, about 10 to 11 o'clock, became worse. Sometimes it would become worse during the afternoon, often about two hours after a meal. She did not vomit and never brought up any sour material into the mouth. The motions were not noticed to be darker in colour at any time. Since then up to five weeks ago has been going about and attending to her work—she is a matron at a school. But she has continually complained of the pain, which seems to have come generally within two hours of a meal; she kept a record on paper of the times of onset of the pain. During the last five weeks she appears to have been slightly worse, and she has noticed that the pain comes on sometimes almost immediately after food and sometimes one hour later. She was on milk diet for many weeks. The pain is described as being like a hot iron being passed through the body to the back to the right of the umbilicus.

At the operation the stomach, duodenum, and gall bladder were normal. A moderate degree of pyloric spasm was seen. The appendix was normal in its first inch, beyond that it was greatly dilated, thickened, its vessels engorged, and its colour very florid. At the junction of the normal and pathological portions there was a single band of adhesions and a kink. Sections of the distal portion showed "a well-marked chronic inflammation especially in the submucous layer."

There are cases, again, in which the symptoms do not resemble those aroused either by gastric or duodenal ulcer. The complaint again is of "indigestion," of discomfort after food, inability to eat generously, flatulence, aching of the body, occasional colic with diarrhoea which relieves it, and "mucous colitis." Palpitation is not seldom present also, and seems to the patient to be dependent upon the filling of the stomach; as a result the meals taken are often small in quantity, less than enough to appease the patient's desire. In this group of cases a history of an attack of appendicitis, before the onset of the dyspeptic symptoms, may be obtained; or a story may be related of an acute illness, attended by abdominal pain, diarrhoea, and vomiting, which has almost certainly been due to an inflammatory attack in the appendix.

The appendix, when examined before and after removal, may present almost any degree of abnormality. I have twice found it to be tuberculous, on several occasions to be filled with pus, and in every case to show indisputable evidence of ancient disease. The most frequent of all the changes found is this: For the first inch or rather less from its caecal attachment the tube is thin, pale, and narrow; adhesions commonly bind it to the caecum or to the iliac fossa, or, rarely, to the abdominal wall. Beyond this first inch the appendix is enlarged, its walls greatly thickened, and its cavity, which is greatly dilated, contains one or more concretions, or a thick, offensive, and possibly purulent fluid. The distinction between the two portions of the appendix—the one thin, pale, and empty, the other turgid, grossly enlarged, and overfull—is striking. At the junction between them a strong, firm adhesion may be found. In other cases the appendix is club-shaped, with a narrower pedicle and a large free extremity. In all forms its lumen is obstructed either by a definite constriction or by external attachments. On section the walls show the evidences of old inflammation, and the submucosa especially seems to bear the traces of this attack.

In some of the cases, though these are few, the appendix itself appears to differ little or not at all from the normal. It is merely adherent for an inch or more at the caecal end. These adhesions are of course abnormal, for there is no process of "physiological fusion" in the region of the appendix or of the caecum, and any adhesion implicating the former is certainly pathological. The microscopic examination of such an appendix does not fail to show that old and probably long-continued inflammation has had its seat in the walls of the little tube. It is the rule for the appearances to be those due to a long-continued smouldering inflammation rather than to a single flagrant attack. Among my specimens are two exemplary instances of diverticula, the appendix being studded with the minute excrescences due to hernial protrusions of the mucous membrane.

A far greater amount of information, based upon observation both before and after operation, is necessary before the exact characters and precise frequency of this condition of "appendix dyspepsia" can be gauged. The number of investigators, too, needs increasing. The range of observation during the progress of an operation for supposed gastric disorders needs extension. Of the facts that dyspepsia, often confidently assumed to be the effect of a gastric lesion, may be dependent upon nothing else than a structural change in the appendix, and that the symptoms are completely relieved by ablation of this part there can be no question. The typical "gastric ulcer" of the medical textbook, in my view, is frequently the appendix. The bearing of this statement upon the need for and the efficacy of the diverse systems of medical "cures" is obvious.

I cannot refrain from wondering in what proportion of cases of "gastric ulcer" treated medically there is truly a structural change in the walls of the stomach. Though the diagnosis is probably quite frequently wrong, the treatment by rest and a restricted dietary can do nothing but good to an inflamed and adherent appendix. If, therefore, relief, fugitive or permanent, should follow upon this treatment, the diagnosis of a gastric lesion is by no means thereby confirmed.

### Conclusions.

The following conclusions may be stated:

1. The symptoms of both gastric and duodenal ulcer, especially the former, may be exhibited with great fidelity in cases where no structural lesion can be found in these parts.
2. In many of the cases of "gastric ulcer" in which the symptoms pain, vomiting, haematemesis are present, and in many cases of intractable dyspepsia of a capricious kind, the only pathological change discovered during operation is a chronic inflammation of the appendix.
3. Removal of the inflamed and obstructed appendix is generally followed by a complete and instant relief of all former dyspepsia. The cessation of symptoms may, however, come only by degrees and with the lapse of many weeks.
4. No operation for supposed gastric or duodenal ulcer is complete until an examination has been made of the appendix, small intestine, and mesenteric glands (that is of the midgut).
5. If in such an operation no lesion can be found in the stomach or duodenum, it is not permissible to perform any operation such as gastro-enterostomy. This operation has results not surpassed by any other when performed in strictly appropriate cases. It is worse than useless in chronic appendicitis.
6. The mimicry of the symptoms of gastric ulcer in these cases is due to an exaggerated action of the pylorus. This tumult of contractile activity can be recognized when the stomach is inspected.
7. Investigation is necessary to ascertain the frequency with which the mucous erosion of the stomach (the "acute" or "medical" ulcer) is dependent upon a primary lesion in the appendix or intestine.

### References.

[1] British Medical Journal, 1904, i, p. 414. [2] *Annals of Surgery*, 1906, i, p. 512. [3] *Lancet*, 1901, i, p. 1819.

Drs. Calabrese and Burro have lately published a report on the antirabic vaccinations carried out in the Antirabic Institute of Naples during the three years 1906–08. The total number of bitten persons who were treated was 2,616; of these 851 were inoculated in 1906, 992 in 1907, and 773 in 1908. Most of the patients belonged to the city and province of Naples. Of the total number 1,122 were bitten by animals experimentally proved to be suffering from rabies; 1,001 by animals who showed the clinical symptoms of rabies; and 493 by animals which were only suspected of having the disease. There were only 12 failures, giving a mortality percentage of 0.46. From the time the institute was opened in August, 1886, till December 31st, 1908, the total number of cases treated was 8,446, with a mortality of 0.53 per cent. The highest mortality has always been among persons bitten on the face, the lowest being among those bitten through the clothes.

# A Clinical Lecture
ON
# WHEN TO OPERATE FOR APPENDICITIS.*

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IT is certain that a great many people die of appendicitis who could be saved by timely operation, and that we in England err on the side of conservatism, whereas it is probably true that some American surgeons go to the other extreme. What a pity that we cannot lay down absolute rules which would always guide us to take the right course; but in this, as in other branches of surgery, no such laws can be made because of a variety of circumstances. Diagnosis is difficult; patients may grin and bear in silence, or refuse to be guided, and a skilful surgeon may not be available at short notice. In this lecture I propose to give my own opinions, formed after some years' experience.

## A.—AFTER ONE ATTACK.

Most physicians and surgeons are now of opinion that it is wise to remove the appendix after one attack of appendicitis. It is certainly true that one attack does not usually protect against another; it nearly always predisposes. Moreover, it is never certain that a second or subsequent attack may be trivial like the first. The evidence goes to show that succeeding attacks increase in severity. This is only what one would expect from the mechanical changes occurring in the appendix during each attack. It is a mistake to suppose that the patient who has had one severe attack of appendicitis is not likely to develop peritonitis in the second. Adhesions rarely shut off the whole of the appendix from the peritoneal cavity, and often enough they entirely disappear, so that the appendix may lie free in the abdominal cavity a month after a severe attack. This is often seen at an interval operation. If one goes into the history of any patient who comes into "clinical" with spreading peritonitis due to appendicitis, one usually finds that he has already had several milder attacks. It is true, of course, that in some cases the first attack is grave and rapidly leads to spreading peritonitis. Remembering these facts, it seems to be foolish to wait for a second attack before operating. It is far better to get rid of the appendix and be on the safe side. To wait for a second attack, with the idea of operating very early in the attack, seems to me to be wrong, because no one can ever foretell the circumstances under which the second attack may arise. It may be impossible to operate early enough to make the operation as safe as one undertaken in the quiescent period. The best time for operation is about three weeks after an attack, when the inflammatory adhesions have absorbed and the intestines have assumed their normal condition, and before another attack is likely to develop. While waiting for operation the patient should avoid all but the gentlest exercise. The operation undertaken within a few days of an attack may be attended with considerable difficulty on account of inflammatory adhesions, haemorrhage, and possible pockets of pus, so that drainage may have to be established in some cases, with the attendant risk of hernia. Some attacks never do subside, but become subacute. In these there is usually a little pyrexia and some local induration, due to the presence of a small abscess with thick walls. There is nothing to gain by waiting in these cases, and much to lose from the risk of general infection.

## B.—EARLY IN THE ATTACK.

I hold very strongly that it is wise to operate, whenever practicable, as soon as the diagnosis of appendicitis is made, and, if possible, within twelve hours of the commencement of the attack. This is the only way to avoid dangerous and troublesome complications. Moreover, this saves the patient a great deal of time and money, and relieves the medical attendant of much anxiety. At this early stage the operation is very easy because of the absence of adhesions, and it is almost, if not quite, as safe as an "interval" operation. Appendicitis is only dangerous when the inflammation is allowed to spread beyond the appendix, and gives rise to complications which of necessity take some time to develop, and are preventable. Various authorities give the mortality of appendicitis as from 14 to 20 per cent. This ought to be capable of reduction to less than 1 per cent. by operating at the earliest possible moment, as shown by experience and an increasing volume of evidence. I have not lost a single patient operated upon within twenty-four hours. In many cases perforated duodenal or pyloric ulcer, inflammation of Meckel's diverticulum, and suppuration of the gall bladder have been mistaken for appendicitis, and the resulting delay in treatment under the conservative régime has usually been serious. Early exploration enables the surgeon to discover his error and to treat these grave conditions while they are in a hopeful stage.

### *Dangerous Complications.*

Some attention may now be given to some of the dangerous complications which are mostly avoidable by early operation.

1. *Spreading Peritonitis.*—Frequently during an early operation, a gangrenous distended, but still shiny, appendix is discovered ready to perforate at any moment. No one can say, with any pretence of accuracy, what the condition of the appendix may be until the abdomen is opened, and to wait in many cases is bound to be disastrous. He who dares to guess the end of an attack of appendicitis assumes the power of prophecy. Moreover, with our improved methods of treatment, even peritonitis, *if treated early enough*, does not possess its ancient peril. Nothing has surprised me so much as the way in which patients with early peritonitis make a complete recovery after the modern operation. Thirteen years ago, when I was a "clinical" at Guy's, all cases of peritonitis coming into "clinical" during three months died. Now quite 75 per cent. get better, partly because they are admitted earlier, but chiefly because, with increasing knowledge, they are treated better (vide infra).

2. *Localized Abscess.*—A localized abscess due to appendicitis carries with it a risk of death of about 15 per cent. It is much better to operate before an abscess can have time to develop. I am well aware that it is not always possible, because patients occasionally present themselves for the first time when an abscess is already formed. There are instances of subacute attacks in which patients may continue at work until the symptoms and signs of an abscess may develop. The dangers of an appendicular abscess are chiefly due to its liability to rupture into the peritoneum, causing spreading peritonitis. Many of the cases of peritonitis are of this secondary type. During the operation for appendicular abscess it is easy to notice how frail the adhesions are that separate the abscess from the abdominal cavity, so that any unusual exertion, or the natural increase of tension, may lead to rupture into the peritoneal cavity at any moment. In more fortunate cases the abscess may burst into the intestine, and the patient may often get well soon after this; but it is a mistake to think that such a patient is not liable to future attacks. An abscess may burst into the urinary organs, possibly leading to cystitis and ascending suppurative nephritis. An abscess may form in the pelvis and lead to permanent damage to the important structures placed there. Residual abscesses may form at some distance, such as subdiaphragmatic abscess, which is still attended by a high mortality.

3. *Empyema and other Pulmonary Complications.*—There is little room for doubt that infections of the lungs and pleura are mostly embolic, and that the liability to them increases with the duration of the appendicitis. It is a fact that these complications, and especially subdiaphragmatic abscess, are far less common in patients treated by early operation. It stands to reason that with the continued presence in the abdomen of an inflamed appendix with infected blood vessels in communication with the portal vein, portal pyaemia is much more likely to occur than if the appendix is removed at once. Moreover, the presence of a suppurating appendix is a constant risk of general pyaemia.

4. *Intestinal Complications.*—Intestinal adhesions with secondary intestinal obstructions and also faecal fistulae

* Delivered at Guy's Hospital.

are far more likely to develop in neglected cases. Moreover there is some evidence to show that chronic constipation in many cases dates from a severe attack of appendicitis, followed by contracting adhesions.

5. *Hernia.*—By operating very early the abdomen can be completely closed in the majority of cases without endangering the life of the patient. Thus the risk of hernia is minimized. These early cases are in striking contrast with those in which one is driven to operate late in an attack of spreading peritonitis or large abscess, when it is necessary to drain the abdomen for a few days at least.

### C.—Cases not seen Early in the Attack.

It must be allowed that, although an operation at the earliest possible moment is the safest and best treatment for appendicitis, it is often impossible to get this done, for various reasons. Poor patients often do not ask their doctor to see them until they are getting seriously ill, and have tried in vain all their homely remedies, more especially a variety of purgatives. A skilful surgeon may not be available, the diagnosis may be very doubtful, or a patient may at first refuse operation. If the advantages of early operation were properly appreciated by those concerned it is certain that there would be less delay than there often is at the present time. The public, and even the medical profession, have still much to learn in this direction.

In such cases, seen after the most favourable time for operation has been allowed to pass, it is a difficult matter to decide for or against immediate operation. If the signs and symptoms are subsiding, it may seem wise to postpone the operation until about three weeks after the attack; but it must be remembered that appendicitis is a treacherous disease which is liable to take a bad turn at any moment, and that the patient is never safe until the appendix is removed, so that if surgical aid is not available at short notice, it is safer to operate at the first opportunity. The risk of operation in such cases is small, whereas the risk of leaving alone is uncertain. Under more favourable circumstances, such as exist in the wards of a hospital, where an operation can be performed at any moment, the risk of waiting for the quiescent period is smaller, and may seem to be justified by the low mortality of the interval operation. But in some apparently mild cases in which this course is adopted an abscess develops at any time within about fifteen days of the onset of the attack, often after all danger is supposed to be over. Then an operation has to be undertaken under less favourable circumstances than at an earlier stage. The risks of complications and of death are increased, and the difficulty of removing the appendix is greater on account of denser adhesions between vital structures and the presence of pus. Drainage is usually necessary, and a ventral hernia is apt to follow.

In those cases in which an abscess would not otherwise develop, I do not believe that an operation at any stage of the disease increases the danger. The risk of causing a localized peritonitis to become diffuse is a very small one if proper precautions be taken to prevent it. The same is true of infection and suppuration of the abdominal wall. It is assumed, of course, that the surgeon is experienced and skilful in abdominal surgery, for what may be a safe course for one surgeon may be dangerous to advise for another. In any case, waiting involves waste of time, money, and anxiety. For these reasons I believe it is wise to recommend operation without delay in all cases of appendicitis when the circumstances are favourable, and a capable and experienced surgeon is available for what may prove to be a difficult operation. I believe that a careful operation reduces the dangers of the disease at all stages. Every surgeon knows that it is practically impossible in many cases to estimate the gravity of the patient's peril before the abdomen is opened. The duration of the disease is of little value, although it has been relied upon. The symptoms and even the signs are often deceptive. A wise and conservative physician told me that he had painfully and slowly come to the conclusion that immediate operation is the best treatment for appendicitis, at whatever stage the patient is first seen. However, different opinions prevail concerning the treatment of cases in which the patient is not getting worse, or the disease seems to be subsiding. When the signs and symptoms are getting progressively worse or fail to subside in due course, it is imperative to operate without delay in order to save life. This is not the time to dwell upon the troublesome sequelae of late operation. It is important to mention some of the most reliable signs and symptoms which indicate that the patient is getting worse, and that an operation is urgently required.

#### *Signs and Symptoms.*

1. Increasing rigidity, tenderness, and fixation of the abdominal wall. When these conditions are localized to the right iliac fossa, they usually indicate a localized abscess, but when they are spreading they indicate a spreading peritonitis.
2. Persistence of pain and vomiting.
3. Accelerating pulse-rate.
4. Rapidly rising or falling temperature, especially associated with shivering; these indicate a rapid spread of the disease, and often follow the discharge of pus into the peritoneal cavity.
5. Shifting dullness in the flanks, indicating the presence of free fluid in the abdomen, generally due to spreading peritonitis, although there may be free fluid complicating a local abscess.
6. The presence of a tender, dull swelling in the iliac fossa, loin, or pelvis, the latter being discovered by bimanual examination.
7. Leucocytosis, especially a rise in the proportion of polymorphonuclear cells.
8. Flushing of the face.

These indicate localized abscess. When the abscess is unusually high the appendix is retro-caecal or the caecum has failed to descend naturally. When it is situated in the pelvis the appendix is hanging over the brim. The pelvic abscess is often indicated by frequent and painful micturition, rectal tenesmus, and diarrhoea. It may not be possible to feel the localized swelling until the abdominal muscles are relaxed by an anaesthetic. The swelling may be resonant, especially in late cases, from the presence of gas in the abscess.

9. Rapid wasting.
10. Profuse sweating, often associated with rigors.

These indicate spreading infection and suppuration.

The peritonitis is getting grave when distension of the abdomen and tympanites begin; but operation should not be deferred so long. It is not wise to wait for fluctuation, redness, or oedema before opening a localized abscess, because of the grave danger of peritoneal and vascular infection.

It may be repeated that an exploration is the only reliable means of ascertaining the nature and extent of the abdominal disease, the signs and symptoms being notoriously inadequate.

### Conclusions.

1. It is wise to remove the appendix in the quiescent period after one definite attack of appendicitis.
2. The best treatment of acute appendicitis is an operation at the earliest possible moment, if a good surgeon is available.

Since this lecture was sent to press my late dresser, Mr. Mutch, has collected and analysed the results of a large number of cases treated at Guy's Hospital. His paper will be read before the Guy's Physical Society shortly. He has kindly given me some of his figures and conclusions, which strongly support my remarks upon the wisdom and safety of early operation.

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The next examination for the award of the Smith Turner Scholarship in Dental Mechanics—annual value £30—founded by the British Dental Association in 1907 to honour the memory of James Smith Turner, will be held on April 15th, 1910. The scholarship is open to any registered dental student who, in the opinion of the committee, has financial difficulty in completing the dental curriculum. The examination in dental mechanics is both practical and viva voce. The scholarship is tenable for one or two years, at the discretion of the committee, and is paid to any dental school in discharge of fees. Applications must be received on or before April 1st, addressed to the Honorary Secretary, British Dental Association, 19, Hanover Square, London, W.

# Remarks
ON THE
# TREATMENT OF GASTRIC ULCER.*

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IT is not only just but expedient that physicians should recognize and acknowledge the splendid work which their surgical colleagues have accomplished within recent years in the domain of gastric surgery. So excellent have been their results in certain classes of cases that one is not surprised to find a growing tendency among all sufferers from any variety of gastric trouble to gravitate to the consulting rooms and hospital wards of the operating surgeons.

Fifteen years ago the physician called the surgeon to his assistance when some calamity, such as perforation, had arisen in connexion with the treatment of a gastric case. To-day there are signs that the positions are becoming reversed, and it may be that somewhere in the near future it will rest entirely with the surgeon to decide what cases he will himself treat and what he will relegate to the care of the physician. Needless to say, the prospect that such a state of affairs may arise is not altogether pleasing to the physician, and, furthermore, I believe, if it does happen, that it will neither tend to the advancement of scientific surgery nor lead to greater confidence on the part of the public. There is great need that the physician and surgeon should continue to work together, for there is still room for both, and in no section of human ailments is it more necessary that they should work together, and their relative powers and limitations be recognized, than in the case of gastric derangements.

A feeling appears to have gained a hold in the minds of the surgical profession that their medical colleagues have been slow to recognize the possibilities for good that lie within the scope of the knife, and have accordingly been slow in seeking for surgical assistance, whereas the physicians, on the other hand, appear to have become imbued with an idea that surgeons were occasionally reckless in undertaking operations, and were not too punctilious in giving up the future care of the patients.

These points of view, and perhaps others, have led, I believe, to a certain amount of estrangement between physicians and surgeons, and the short paper which I bring before the Academy to-night is written with the best intentions to endeavour to show what the physicians may fairly claim to be able to accomplish, and the extent to which surgical interference may be productive of good in the treatment of cases of gastric ulcer. I trust also that what I have to say may do something to remove any feelings of distrust which the two great branches of the medical profession may entertain towards one another.

My surgical colleague, Mr. William Taylor, has lately mapped out certain lines which he is disposed to follow in regulating his practice in the treatment of gastric ulcer, and I am pleased to say that I am in complete agreement with him in nearly every instance.

The rules which I have formulated for my own guidance are somewhat upon the following lines:

1. Cases of acute ulcer of the stomach may be confidently expected to get well with a course of sufficient rest combined with suitable dietetic and medicinal treatment. Should perforation, however, occur, as it sometimes does, even during a course of the above-mentioned treatment, then it is almost needless to say that surgical assistance is imperatively called for. On the other hand, should haemorrhage—even several successive haemorrhages—occur, I am not prepared to advocate operative interference in these acute cases. This is, I think, the only point upon which I am unable to agree with Mr. Taylor, who considers that where a copious haemorrhage has taken place, and more particularly where there is an immediate recurrence of it, an attempt should be made to secure the bleeding vessel in the floor of the ulcer. His reasoning, however, that a life may be lost which an operation would have saved, is worthy of careful consideration.

2. In all cases of chronic gastric ulcer (of a non-malignant type), unless it is apparent at the time that pyloric obstruction has been already produced by the ulcer, I consider it is only fair to give the patient a chance of recovery in the first instance by a course of treatment similar to that employed in acute cases. I am bound to admit that, in the great majority of cases where the symptoms have been in evidence for a year or longer, recurrence of such symptoms takes place within a longer or shorter period, as the case may be, even although a cure appeared to have been effected as the result of the rest combined with dietetic and medicinal treatment. I am convinced, however, that a small proportion of these cases remain permanently well, and for this reason I believe the physician is justified in attempting the cure.

It is in the chronic cases, where symptoms *recur*, that surgical interference has been followed by the most brilliant results, and it is in such cases that I gladly recognize the good effects that follow the operation of gastro-enterostomy when performed by a skilful surgeon; but it must be admitted that even when we exclude such occasional accidents as the occurrence of the vicious circle or perforation from an intestinal ulcer which has formed at a point opposite the opening of the stomach, there is still a margin of cases, whose number is at present unknown, in which all the previous symptoms reappear after operation. Nevertheless, there should be no hesitation in recommending a gastro-enterostomy to be performed in all chronic cases in which there is an undoubted recurrence of symptoms pointing to a chronic ulcer.

The question of the hydrochloric acid content of the gastric secretion has an important bearing upon the treatment of gastric ulcer, whether the treatment be dietetic and medicinal or whether it be surgical; but it is not within the province of this short paper to discuss the diagnostic significance of the absence or presence of free hydrochloric acid in the various derangements of the stomach, although the importance of having a chemical examination made of the stomach contents after a test meal has been given is now fully recognized as affording a distinct help in the diagnosis of functional as well as organic cases. I can only touch at present upon the result of chemical investigations that have been made in recent years in connexion with cases of gastric ulcer.

Dr. Willcox, of St. Mary's Hospital, London, published[1] a critical review of the estimation and quantitative significance of hydrochloric acid in the gastric contents, and from it I extract the following table:

HCl may exist as—
- I. Free hydrochloric acid—that is, the acid is not combined with any base either inorganic or organic.
- II. Hydrochloric acid which is combined—
  - (*a*) With proteins.
  - (*b*) With other nitrogenous organic bases.
- III. Hydrochloric acid which is combined with inorganic bases to form neutral salts—for example, sodium chloride.

Active hydrochloric acid.

The first two combined he calls "active hydrochloric acid." They must have been secreted by the stomach, and, as is shown in the table, are equal to the free HCl + the HCl combined with proteins and other organic bases.

Many workers, such as Vaughan Harley and Goodbody, in making a quantitative examination of the gastric contents, determine the amount of volatile acid, the amount of free HCl, the amount of HCl combined with proteins, and also the amount of HCl combined with minerals.

The point, however, upon which I desire to concentrate attention is that in the great majority of cases of gastric (and also of duodenal) ulcer the "active hydrochloric acid" is markedly increased, and free hydrochloric acid is present *in excess*. The condition, as you are aware, is spoken of as hyperhydrochloria or hyperchlorhydria.

I cannot here indulge in a recital of the numerous theories that have been put forward to explain the occurrence of a gastric ulcer, but it is now pretty generally accepted that an excess of HCl in the gastric secretion is an important factor in its causation. Bolton

* Read in the Section of Medicine, Royal Academy of Medicine in Ireland.

found that if gastrotoxin is introduced into the wall of the stomach of an animal, necrosis and ulcer will result, but not if the HCl has been previously neutralized by sodium bicarbonate. If we admit, therefore, that there is an excess of HCl in cases of gastric ulcer; if we further admit that probably the excess of HCl is an important factor in producing the ulcer; and if it can be also admitted that the presence of the excess of HCl is an important agent in the production of pain and in the prevention of the healing of the ulcer, then we are in a position to approach the relief of such a condition by methods founded on a sensible basis. That is, we must endeavour to get rid of the excess of hydrochloric acid in the gastric contents. Now let us consider in what way we may hope to accomplish this.

First of all, there is the administration of alkalis, given with the object of neutralizing the excess of acid. At best the relief afforded in this way is only of a temporary nature, even if harm is not done by the use of bicarbonate of sodium, which is so frequently used.

Secondly, attention has already been directed to the important fact that HCl combines in the stomach with proteins given as food, so that the importance of a diet rich in easily assimilated proteins at once becomes evident. Lenhartz took advantage of the fact that HCl in the gastric secretion combines with protein food, and introduced with great success the treatment of acute gastric ulcer by what is known as the method of "immediate feeding," by which much larger quantities of food rich in proteins are given than was previously thought advisable. To the details of this method I shall subsequently refer.

Thirdly, the administration of a ferruginous preparation, such as the dried sulphate of iron, may be considered capable of using up some of the excess of HCl in the gastric contents by forming an albuminate and a chloride compound. Investigations have shown, moreover, that there is an excess of HCl present in cases of chlorosis, and we are familiar with the frequency with which anaemia and gastric ulcer are combined, so that in the administration of an iron preparation in cases of gastric ulcer we may prescribe it with a double object, first as a means of using up the excess of HCl, and, secondly, to relieve the anaemia.

When we come to the question of the treatment of chronic ulcers that have not proved amenable to the methods that meet with success in acute cases, it is surely a tremendous advantage to the physician to be able to rely on the help of his surgical colleagues who will perform a gastro-enterostomy and cure the patients. It is only right that we should endeavour to obtain an answer to the question—How does this operation afford relief and effect the healing of a chronic ulcer?

I have never hesitated to teach that, in my opinion, gastro-enterostomy was not a sound or scientific procedure. I have maintained that where possible the removal of the ulcer, to be followed afterwards by suitable dietetic and medicinal treatment, would be a more surgical undertaking and more likely to end in permanent benefit to the patient. I recognize, however, that in some cases the removal of the ulcer might be impossible, and that a gastro-enterostomy is at present the operation which surgeons most readily undertake, and although I am not altogether in favour of having a second opening made in the stomach when the pylorus is patent, still I am bound to testify to the excellent results which follow the procedure. Many reasons have been adduced to explain the curative action of a gastro-enterostomy, but it is now pretty generally admitted that the second opening in some way relieves the hyperhydrochloria.

Willcox, in the criticism before referred to, published the result of the examination of the gastric contents in five recent cases in St. Mary's Hospital before and after gastro-enterostomy for gastric ulcer.

He found that *free* hydrochloric acid was absent in three cases after the operation, although present before the gastro-enterostomy was performed, and, further, that in every case the *active* hydrochloric acid was reduced after the operation. Bile and mucin were found in all the cases after the operation, and this has led him and others to assume that these were carried from the duodenum into the stomach through the new opening, and without doubt that the presence of bile, etc., in the stomach had the effect of partly neutralizing the HCl secreted by the stomach. There can be little doubt also that the opening into the intestine favours the escape of the highly acid gastric secretion.

I was under the impression that the view was prevalent among surgeons that the partly-digested food passed directly from the stomach into the small intestine after a gastro-enterostomy had been performed, and thus gave rest to the wall of the stomach and the ulcer it contained. But, while one authority states that where the pylorus is patent it is quite easily demonstrated by means of bismuth in the food and *x* rays that the food continues to escape from the stomach by way of the pylorus, another equally eminent observer has equally plainly observed the food passing through the gastro-enterostomy opening directly into the jejunum. If it were beyond question that the food continued to pass through the pylorus, then it removes one of the most serious objections which I had formed against gastro-enterostomies, for it was apparent that it could not be right to divert the food away from its natural course, where its stimulating effects in the duodenum would be lost on the pancreatic and hepatic secretions.

It is true that in some cases of chronic ulcer, where the symptoms have extended over several years and much inflammatory thickening is found, the active hydrochloric acid may not be much raised or may only be normal in amount, but still it is said (Willcox) that these cases are also cured by a gastro-enterostomy. From this observation one is not unnaturally led to suppose that other factors enter into the cure by operation besides the relief of the hyperhydrochloria.

I now wish to examine the treatment of acute ulceration a little more in detail. Rest, milk diet, relief of constipation, with bismuth and alkali mixtures, and iron, form the basis of the lines on which most physicians in this country work.

In London rectal feeding has been much more extensively employed than has ever been the case here. In Dublin a milk diet (of from two to three pints a day) has been attended with excellent results, and is that upon which I have on the whole relied. For many years, however, I have been emphasizing the fact that iron is very scantily represented in milk. Stockman in 1891 calculated that 5 pints of milk would be required to supply the amount of iron required daily by a full-grown adult, and, to quote Hutchison, "for this reason persons who are kept for a long time on a purely milk diet are apt to become anaemic." As previously stated, patients with gastric ulcer are practically always anaemic, and a milk diet makes them more so. Undoubtedly milk is one of the least irritating of foods in causing a flow of gastric secretion, but there is no doubt that in eggs we have another food which is of the greatest value in the dietary of cases of ulcer of the stomach. The egg albumen readily takes up HCl, and so relieves the hyperacidity. The yolk is of great nutritive value, as it contains protein and a large amount of fat; but, furthermore, it is comparatively rich in iron, which is present as an organic compound, probably with nuclein, and, therefore, as an organic compound it is easily absorbed.

Stockman calculated that seven and a half ordinary-sized (2 oz.) eggs yield sufficient iron to supply the blood of an adult with its daily requirement in this respect. For these reasons I have been accustomed to add the albumen water and the beaten-up yolk in soda water of one or two eggs daily to the milk diet.

Where Professor Lenhartz's treatment has made a departure from recognized methods is in the rapidity with which he increases the amount of nourishment given to the patient by the mouth. I have the strongest objection to be tied down to hard and fast rules which must be slavishly followed in every case irrespective of the special characteristics of the patient or of the disease; but I was agreeably surprised to find how little modification on the whole it required when one comes to put the treatment into practice. The details of the treatment are:

1. Rest in bed for four weeks, during the first two of which the patient is not even allowed to sit up for any reason whatsoever.

2. An ice-bag is kept on to the epigastrium for the first two weeks.

3. The dietary consists of 10 oz. of milk and one beaten-up egg on the first day, and each successive day 3½ oz. of

milk and one egg beaten up with sugar are added until a total of 1½ pints of milk and six or eight eggs are consumed, and this corresponds with the eighth day. From the third to the eighth day, according to the disappearance of symptoms, 1 oz. of raw, or nearly raw, minced beef or chicken is given, and increased next day to 2 oz. if well borne. About the eighth day a little well-boiled rice is given, followed in a few days by softened bread, and then a small amount of bread-and-butter. The number of eggs are gradually reduced, and one or two of them are given, lightly boiled, as the other food is increased. During the third week more mince and pounded fish are given, and by the end of the fourth week the patient is able to partake of normal diet and to get out of bed. He leaves hospital about two weeks after.

4. As to medicine: For the first ten days 30 grains of subnitrate of bismuth without mucilage are given thrice daily, and towards the end of the first week pills are administered containing dried sulphate of iron and light magnesia. The amount of sulphate of iron may be increased from 7½ grains to 30 grains daily.

5. The bowels are not interfered with during the first week, although a natural action may occur, but afterwards an enema, if required, is administered every fourth day.

There is nothing of very much importance in all this detail—nothing that appeals for its enthusiastic and slavish adoption any more than for its scornful rejection. To me it seems that there is included in the method one outstanding principle, the adoption of which, if it can be carried out with safety to the patient, is an advance on previous dietetic methods. This principle is the giving of easily assimilated protein food in rapidly increasing amount, so that the excess of free HCl is taken into organic combination, and by giving a large amount of nutriment the strength of the patient is quickly restored, and the gain in weight is marked. I have not used the ice-bag. Professor Lenhartz is a strong advocate for a supply of good teeth, and instructs his patients to masticate slowly. We all agree in the necessity for teeth that can chew. It is possible that much ill-health and anaemia may arise from continued absorption or the swallowing of septic material in cases of dental caries, but the want of grinders is, I fancy, greatly to blame in the production of gastric ulcer. For the person who is unable to chew falls back upon soft carbohydrate food, which tends to produce excess of HCl without using it up by forming organic compounds.

I wish to refer very briefly to my own experience in the adoption of Lenhartz's treatment, which I have followed fairly closely in all respects with the exception of the ice-bag.

In a case of chronic ulcer with gastrectasis the patient, a labourer, aged 28 years, was put on the treatment on May 5th last, when he weighed 7 st. 1 lb. He left hospital free of all symptoms on June 22nd, when he weighed 9 st. 4 lb. (a gain of 2 st. 3 lb.). His symptoms of pain and discomfort returned in August. He again entered hospital on November 4th, when he was transferred to the surgical wards under Mr. Taylor's care, and a gastro-enterostomy was performed and an ulcer found. He is now in excellent health, I am told.

In three cases of acute ulcer in women the results were most satisfactory.

One remained in hospital under this treatment from May 25th until June 22nd. She left free from symptoms, was eating ordinary diet, and increased in weight from 7 st. 4 lb. to 8 st. 7 lb., and is still in good health.

The second was placed on the treatment on September 26th, and left hospital on October 31st, having no symptoms, eating all food, and having increased in weight from 7 st. 6 lb. to 8 st. 7 lb.

The third was placed upon the treatment on November 20th, 1909, and she was free from all symptoms, eating all food, and left hospital on January 3rd, 1910.

I have tried the immediate feeding on several other cases where the diagnosis was in favour of a neurosis rather than of ulcer, but the results were not satisfactory.

REFERENCE.
[1] *Quarterly Journal of Medicine*, October, 1909.

ARRANGEMENTS have been made for lectures on tropical subjects to be delivered to nurses at the London School of Tropical Medicine, Royal Albert Dock, E. Any qualified nurse may attend the course, whether she intends proceeding abroad or not.

## AN ANALYSIS OF A SERIES OF CASES OF PERFORATED GASTRIC AND DUODENAL ULCERS.

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THE following remarks are based on a series of 11 cases of perforated gastric and duodenal ulcers which have been under my care during the past two years in the wards of the Western Infirmary. The cases, while perhaps in no way very unusual, serve to illustrate many points in the diagnosis, and the results of treatment of these lesions, and some of them, I think, present features of special interest sufficient to warrant their publication.

I have not distinguished the gastric from the duodenal cases for the reason that, in the main, the clinical signs and symptoms are identical, and the treatment is the same. It is not always possible to say to which of the two classes a given case belongs until the abdomen is opened, although sometimes the previous history may suggest a definite site for the lesion.

My cases bear out the generally accepted view that duodenal ulcer is more common in men, and gastric ulcer in women. All the duodenal cases, 4 in number, occurred in males, while of the 7 gastric cases, 6 occurred in females. One of the latter (Case IX) was really a malignant tumour of the pylorus, which gave way suddenly while the patient was in hospital, with the usual sudden acute symptoms of a perforating lesion; while Case XI was a perforated "peptic ulcer" at the line of junction between stomach and jejunum, in a patient on whom a gastro-enterostomy had been performed four months previously.

*The ages* of the patients varied from 21 to 65 years, the average age being 39 years.

*The site* of the ulcer in all but two of the cases—that is, in 82 per cent. of the whole—was quite close to the pylorus, and in the whole series was situated on the anterior wall of the organ.

*The ulcer* presented in most of the cases a more or less definite punched-out appearance, with characteristic hard edges, and varied in size from a very tiny opening to ¼ in. or more in diameter. Cases I and IV, both of which died, presented not so much a perforated ulcer as a large ragged opening, which could not be satisfactorily closed by suture. In Case II, although the history of the attack and the symptoms on admission seemed quite typical, no actual perforation was found at the operation. In Case VII, although I had no doubt as to the diagnosis, operation was not performed immediately, but eight days after admission, for a large subphrenic abscess.

*Mortality*.—Excluding, for obvious reasons, the malignant case above referred to (Case IX), we have 10 cases operated on, of which 7 recovered and 3 died—a mortality of 30 per cent.

### *Diagnosis.*

In considering the question of diagnosis of perforation of stomach or duodenum, it must be recollected that the symptoms most characteristic of this catastrophe are not necessarily those exhibited by the patient when admitted to hospital. The most typical signs are those presented at the very beginning, which therefore come under the observation of the practitioner first called in to see the patient. The signs often described in textbooks as indicating rupture of stomach or duodenum, such as distension of the abdomen, absence or diminution of liver dullness, general tenderness and rigidity, and rise of temperature, are late symptoms, indicating spreading mischief, due probably to perforation, but are not signs to be awaited before arriving at a diagnosis, which can as a rule be made quite early, from a proper consideration of the mode of onset of the illness and the character and site of the rigidity.

*The mode of onset* is characterized more than anything else by its suddenness. This was a feature in practically all the cases; the terms "stricken down," "doubled up," or "seized" with severe or violent pain being the descriptions commonly given. The importance of recognizing this, the earliest indication of perforation, cannot be too strongly insisted on, and the responsibility for recognizing

its gravity most often rests upon the medical attendant first called in to see the patient. The following description of the initial symptoms, from a note sent by the doctor with one of these patients, is worth quoting: "The patient was very suddenly seized with a very acute pain in the abdomen to-day. When I saw her she appeared to be suffering great agony. The abdomen was quite rigid, and the breathing was painful. Temperature subnormal. Pulse slow and feeble." This sudden onset of pain is accompanied by collapse, from which the patient may have recovered before reaching the hospital.

*The pain* in all the cases was referred to the upper abdomen, becoming localized in the epigastric or subcostal regions. One of the patients with duodenal ulcer complained of pain in the right shoulder.

*Rigidity and tenderness* follow this onset of acute pain. The abdominal muscles are on guard at once. Rigidity was present in all the cases in the upper abdomen, or at any rate was most marked there. In Case X it was most marked on the left side, corresponding with the seat of the ulcer.

*Vomiting* was definitely stated to have occurred in four cases. In one there had been vomiting of blood. In the other cases no vomiting had occurred at the time.

*Distension* of the abdomen was marked in only four cases (Cases V, VIII, IX, XI).

*Absence or marked diminution of liver dullness* was noted in the same four cases.

*Temperature* on admission, varied from 96·4° to 102° F.

*Pulse* on admission, varied from 64 to 148.

*Respirations* on admission, varied from 16 to 28.

*The appearance* of the patient, seen after the first agony and collapse had passed off, was variable, and sometimes misleading, but as a rule there was something of the anxious look so characteristic of serious abdominal trouble.

*Previous History.*—In every one of the cases there was a history of previous gastric trouble—in Cases VI and X for a week and ten days respectively, but in the majority of the cases for a much longer period of months or years. In two of the duodenal cases the patient gave a history of the characteristic "hunger pain," coming on two or more hours after a meal.

### *Treatment.*

The time which had elapsed between the onset of the symptoms and the operation varied from four to forty-eight hours. With three exceptions, they were operated on within fourteen hours from the time of rupture.

*Operation.*—The abdomen was opened by a vertical incision above the umbilicus, either in the linea alba or through the inner part of the rectus sheath. The escape of gas and fluid at once confirmed the diagnosis. No great difficulty was experienced in any of these cases in locating the perforation, which in every instance was situated in the anterior wall of the organ. The perforation was closed by infolding it with a double layer of Lembert stitches of catgut, or an inner of catgut and an outer of fine silk. Only in one instance (Case I) did I excise the ulcer. In two of the cases, for reasons which are given in the summaries (Cases V and VIII), I performed gastro-enterostomy at the same time. I do not as a rule flush out the abdomen with saline or other fluid, believing it to be neither necessary nor desirable. Efficient drainage was provided by a tube in the pelvis through a median suprapubic incision, and in the majority of the cases by an additional opening in the right flank. Usually, also, a small drain tube or gauze was put into the upper wound, and removed in a few days.

*After-Treatment.*—The patient was kept in bed in the Fowler position. Salines and nutrients were given by the rectum. Small quantities of saline were permitted by the mouth at the end of forty-eight hours, and gradually chicken tea and other liquid nourishment was added. There were no complications to record in any of the cases which recovered. The patient, as a rule, was able to leave the hospital at the end of a month.

### *After-Results.*

I made a point of personally ascertaining the condition of these patients in December, 1909. They were all in very good health. Among the earlier cases, three state positively that they have had no trouble since the operation. Two have had slight symptoms of indigestion for the first time during the previous few weeks. Of these two, one is a gastric case operated on two and a half years ago; the other a duodenal case after an interval of fifteen months. The last two cases of the series, operated on only three months ago, have so far remained quite well.

### SUMMARY OF CASES.

I have to thank the following surgeons—Sir Hector C. Cameron, Sir George T. Beatson, Dr. Renton, and Dr. Dalziel—for permission to publish the summary of cases occurring in their respective wards.

#### CASE I.

E. J., a woman aged 45, was admitted on March 25th, 1907. Twelve hours previously she was stricken down with sudden acute abdominal pain.

*On Admission.*—Temperature was 99° F., pulse 136. She looked very ill. The abdomen was intensely tender and rigid all over, but more markedly so in the epigastrium. Respirations were very rapid.

*Previous History.*—She has had gastric trouble since childhood, and has been ailing more or less continuously for the past year, with frequent attacks of sickness, pain, and vomiting after food. Three days ago she vomited blood, and has taken no food since.

*Operation* thirteen hours after perforation. On opening the abdomen in the middle line above the umbilicus some gas and much dirty brown fluid escaped. A large perforation was found, involving the pylorus, which was extremely stenosed, only admitting a director. The ulcer was excised and the wound stitched in the transverse diameter (pyloroplasty). A large drain was put in above the pubes and in either flank. The patient left the table pulseless, and died two hours later.

#### CASE II.

A. W., a woman aged 21, was admitted on April 7th, 1907, as a case of ruptured gastric ulcer. Twelve hours prior to admission she was seized with severe pain, which doubled her up, and which lasted for several hours, accompanied by sickness and vomiting.

*On Admission.*—Temperature 99.4° F., pulse 120. There was general abdominal tenderness, most marked in the epigastric region. Rigidity was not very marked, and there was little or no distension and no diminution of liver dullness.

*Previous History.*—For three months she has complained of pain soon after food but no vomiting.

*Operation* fourteen hours after onset of acute symptoms. No perforation was discovered, but a well-marked thickened and congested area was found on the anterior wall of the stomach, close to the pylorus. The abdominal wound was closed in layers. Recovery uneventful.

#### CASE III.

L. K., a woman aged 28, was admitted on September 3rd, 1907. She was sent in by Dr. MacIntyre of Airdrie for immediate surgical treatment. While engaged "doing a washing" in the morning, she was seized suddenly with the usual acute symptoms.

*On Admission.*—Temperature 100° F., pulse 148, respirations, 28. She looked extremely ill, with a typical abdominal facies, and lay with her knees drawn up. The abdomen was rigid and tender, chiefly on the left side; respiration was thoracic and painful. There was no distension, and no apparent encroachment on the liver dullness.

*Previous History.*—She had been under treatment for gastric ulcer for some years, giving the usual story of pain and vomiting soon after food.

*Operation* nine hours after rupture. On opening the abdomen some air escaped, and a quantity of milky fluid mixed with particles of food. A perforation of the size of a threepenny piece was found in the anterior wall near the oesophagus, and close to the lesser curvature. The ulcer was infolded with a double row of Lembert stitches, and a small drain left in the wound. A large glass drainage tube was inserted through a suprapubic wound, and the abdomen flushed with saline.

Recovery. Dismissed October 12th.

#### CASE IV.

A. M., a man aged 53, was admitted on December 15th, 1907, *in extremis*, having been ill for two days. His illness set in with sudden pain and vomiting.

*Previous History.*—No definite information could be got, except that he had had trouble with his stomach for a very long time.

*Operation* forty-eight hours after perforation. The abdomen was found full of faeculent material. The intestines were very much distended, with other signs of general peritonitis. A large ragged opening was found involving the pylorus, and first part of the duodenum, from which liquid faeces continued to flow freely into the general peritoneal cavity. The patient was obviously dying, and nothing was done beyond inserting a drainage tube. He died two hours later. No examination was allowed.

#### CASE V.

J. M., a woman aged 22, sent in by Dr. Nairn of Greenock, was admitted on May 13th, 1908. Her illness began the previous day, with sudden severe abdominal pain, accompanied by vomiting and fever.

*On Admission.*—The temperature was 102° F., and pulse 130. She looked very ill. The abdomen was rigid and tender, very much distended and tympanitic. Liver dullness was absent.

*Previous History.*—Pain and vomiting after food for some considerable time.

*Operation* twenty-seven hours after perforation. On opening the abdomen above the umbilicus, gas and free fluid escaped. On the anterior wall of the stomach, near the pylorus, a perforation was found in the centre of a sloughy area of considerable extent. The stomach was markedly enlarged. The perforation and slough were infolded with layers of Lembert sutures, and on account of the narrowing of the pyloric aperture I performed a posterior gastro-enterostomy at the same time. Drainage tubes were inserted locally, as well as above the pubes and in the right flank.

Recovery. Dismissed June 13th.

CASE VI.

W. J., a man aged 45, was admitted on September 10th, 1908. This patient was seen by Dr. Halkett, and sent in within a few hours of perforation.

*On Admission.*—His temperature was 96.4° F., pulse 64, respirations 28. He complained of dull aching pain in the left hypochondrium. There was absolute rigidity of both sides of the abdomen, with great tenderness in the epigastrium. No vomiting.

*Previous History.*—Heaviness in the stomach, and slight pain two hours after food, for the past week.

*Operation* four hours after perforation. On opening the abdomen both gas and fluid escaped. The pyloric end of the stomach was bound down by adhesions, and could not be raised up. A small perforation was found in the anterior wall of the duodenum, quite close to the pylorus. This was closed with a double layer of catgut sutures. Drainage tubes were inserted above the pubes and in both flanks, and a small gauze drain in the upper wound.

Recovery.

CASE VII.

P. W., a man aged 29, was admitted on September 15th, 1908, as a case of peritonitis of four days' duration. On September 10th, after a meal of cornflour, he was seized with sudden severe pain in the epigastrium, which doubled him up. The pain gradually got easier, but recurred on September 12th, and extended to the lower abdomen. Since September 13th pain had been constant under the right costal margin. He has not been sick nor vomited.

*On Admission.*—Temperature 101.4° F., pulse 100, respirations 22. He felt fairly comfortable but for the epigastric pain. The upper part of the right rectus is rigid, and here there is marked tenderness, and dullness to percussion.

*Previous History.*—For five years he has had discomfort and pain two hours after food, and three years ago had an attack similar to the present, but not so severe.

*Operation.*—I had no doubt that in this case there had been a rupture of a duodenal ulcer. Considering, however, that four days had elapsed, and the resulting mischief being quite localized, either because of previously formed adhesions or because the leakage was slight, immediate operation was not indicated. Anticipating the formation of a localized abscess, the patient was simply kept under observation. At the end of a week the abscess, which had increased much in size, was opened by a vertical incision and drained, a counter opening being made in the right flank.

Recovery slow but uneventful.

CASE VIII.

A. S., a woman aged 48, was admitted on September 21st, 1908. This, which proved to be a case of malignant tumour of the pylorus, is included in the series, because perforation took place with the usual acute symptoms, after being three days in the ward.

*On Admission.*—Temperature 98.4° F., pulse 120, respirations 24. The patient was very thin and pale and emaciated. She complained of soreness in the stomach region, but with no marked tenderness. The stomach was dilated, extending 1½ in. below the umbilicus, and exhibiting marked peristalsis and splashing. No tumour could be felt. She was put to bed for observation.

Three days after admission she cried out with sudden severe pain in the epigastrium, and became quite collapsed. She lay with her legs drawn up, the abdomen being very rigid and tender.

*Previous History.*—Indigestion for two years. Pain coming on half an hour after food for the past three months. Vomiting for the last month, sometimes the vomit being black. Stools at times black.

*Operation* three hours after rupture. A large quantity of dark brown bile-stained fluid escaped when the abdomen was opened. The stomach was much enlarged and hypertrophied. At the pylorus there was a hard cartilaginous mass as big as a Tangerine orange, having a large ragged opening the size of a florin in its centre. The tissue was so friable that the opening could not be satisfactorily closed. A posterior gastro-jejunostomy was performed, and drains inserted locally as well as suprapubically and in both flanks. Died a few hours later.

Pathological report: "A large fibrous mass with an adenocarcinoma invading it. Pancreatic tissue is included in the fibrous tissue."

CASE IX.

E. M., a woman aged 43, was admitted on December 11th, 1908. In the morning, while engaged in housework, she was suddenly seized with violent pain in the epigastrium, and became very collapsed. No vomiting. When I saw her with Dr. King of Yoker, at 8 p.m., she had considerably improved; her temperature was 100° F. and pulse 106. There was marked abdominal rigidity, not much distension, and no diminution of liver dullness.

*On admission* to the infirmary two hours later, temperature was 102° F., pulse 124. Rigidity and tenderness were present all over the right side of the abdomen and in the left iliac region. Liver dullness had diminished.

*Previous History.*—Occasional sickness and pain after food for some years.

*Operation* thirteen hours after rupture. The abdomen contained a large amount of turbid fluid. A small perforation was found in the centre of a very hard ulcer, near the cardiac end of the lesser curvature of the stomach, and near the pylorus another doubtful area of stomach wall covered with adherent omentum. The perforation was closed in the usual way. The part near the pylorus was also infolded, and drains inserted above the pubes and in the left flank. The patient died two days later, during which time she was constantly troubled with hiccough, and vomited dark brown fluid.

CASE X.

J. B., a man aged 65, was admitted on August 14th, 1909. He had not been feeling well for ten days, but continued to work. Coming from work the previous night he felt a severe pain under the right ribs, accompanied by sickness and vomiting. He went to work again in the morning, but had to desist on account of a severe attack of pain, which made him fall down. Dr. Allan, who saw him then, sent him in for operation at once.

*On Admission.*—Temperature 98.2° F., pulse 64, respirations 16. The abdomen was rigid and tender, especially under the right costal margin, with pain also in the right shoulder.

*Operation* six hours after onset. On opening the abdomen air and fluid escaped. Just beyond the pylorus, on the anterior wall of the duodenum, was a well-defined perforation a quarter of an inch in diameter. Behind the bowel could be felt a hard mass, which I took to be a gland. The perforation was closed by Lembert sutures in the usual way, and drainage provided for above the pubes and in the right kidney pouch.

Recovery.

CASE XI.

A. T., a man aged 34, was admitted on September 18th, 1909. In the morning he complained of pain in the epigastric region. After his mid-day meal the pain became very severe, and Dr. Allan, who saw him, diagnosed a perforated ulcer.

*On Admission.*—Temperature 98.8° F., pulse 104, respirations 24. He looked and felt fairly well. The abdomen was rigid and slightly tender, and did not move with respiration. Both flanks were dull to percussion, and liver dullness had disappeared.

*Previous History* —This patient had a gastro-jejunostomy performed for ulcer three and a half months ago by Dr. Dalziel. Since then he has been very well, and has gained 4 st. in weight.

*Operation* six hours after perforation. The abdomen contained a large amount of fluid. A perforation about a quarter of an inch in diameter was found in the anterior suture line of the gastro-jejunal junction, evidently a "peptic" ulcer. The perforation was closed by a double row of catgut stitches and the abdominal wound closed. A drainage tube was inserted above the pubes.

Recovery.

P.S.—This patient was readmitted to hospital on January 3rd, 1910, with a fresh perforation in the same situation, and is again making a good recovery.

# THE DIAGNOSIS AND TREATMENT OF A COMMON FORM OF DYSPEPSIA AND OF EARLY TUBERCULOUS INFECTION IN CHILDREN.

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**IN many cases of chronic dyspepsia in childhood the symptoms are sufficiently definite to settle the diagnosis, and the probability of a tuberculous infection lying at the root of the evil is not to be entertained.**

**There is, however, a type of case in which it is extremely difficult to say this is tuberculosis or this is dyspepsia, and an exact diagnosis in these cases is of great importance as leading up to a definite line of treatment. The subject is doubtless hackneyed, the theme a wide one, and the difficulties besetting it great; but owing to recent developments in the methods of diagnosis and treatment I am emboldened to record the impressions I have gained, the conclusions I have formed, and the results I have attained by adopting them in practice.**

**Chronic dyspepsia is a territory of medicine the boundaries of which are wide, the characteristics protean, the limits vague, and the etiology and pathology too often obscure; but with more precise methods of diagnosis at**

our disposal our certainty of knowledge of the incidence of microbic infection increases and our powers of delimitation are enhanced.

One boundary is tubercle infection, another may be rheumatism, another something else; it is with the tubercle boundary in its clinical aspects that I propose to deal.

Some of the cases of which I speak might be called mucous disease, some chronic gastro-enteritis, some lithaemia, some other things, but the point in common in all is that in history, appearance, symptoms—in one or all—grave doubt as to the presence of tubercle infection exists. The chief characteristic of all the cases—tuberculous and non-tuberculous—is their vagueness in personal history and in symptoms; all have very chronic symptoms, mostly gastro-intestinal, and there are no physical signs on which to found a diagnosis.

The cases are those of children of from about 5 to 10 years of age who are not confined to bed but who are going about, are comparatively well, and have approximately normal temperatures. The diagnosis in these cases lies, I take it, between the two following conditions:

On the one hand, a form of chronic dyspepsia which is broadly characterized as follows: The child is thin, has dark rings round the eyes, and looks anaemic but is not actually markedly so. He is nervous, probably smart, and may be subject to bad habits, suffers from constipation and occasional attacks of sickness, at which times he is cold and shivery, and passes a large amount of urine. His gastric digestion is apparently good but he cannot eat fat; he is always relieved temporarily by calomel, and he suffers from no obvious organic condition. During a passing slight acute attack of illness (non-gastro-intestinal) his condition is improved.

On the other hand are cases of early tubercle infection. Here we have a child in many respects very similar in appearance to the foregoing—thin, pale, and not infrequently with a distinct anaemia; with or without a history of tubercle among near relatives—phthisis in an occupant of the home, particularly for some time during the period of infancy, being, however, practically always sufficient for a definite diagnosis; in chronic ill-health, with no definite abnormal physical signs but with assimilative incompetence, gastro-intestinal irritation, lassitude, and weakness. These cases are, I think, practically always glandular—it may be the bronchial, it may be the abdominal glands which are infected, or it may be glands elsewhere, but it not infrequently is the abdominal glands.

Further, while differentiating strictly between the two conditions, I am at the same time sure that this form of chronic dyspepsia, closely simulated as it is by the initial stage of tuberculous infection, not infrequently merges itself in tuberculosis.

The points upon which a definite diagnosis rests are:

1. The capacity of digesting fat.
2. The reaction to tuberculin tests.
3. The condition of the urine.
4. The opsonic index.

Of these tests I shall merely touch upon the two last named; they are complicated and tedious, and, consequently, in many instances are not of practical application.

As regards the urine, I allude more particularly to the quantitative and qualitative tests for sulphates—the determination of the relative amount of ethereal and preformed sulphates. Given its fullest value, this test is obviously no criterion by which one can exclude tubercle infection. I think, however, that absence of excess of ethereal sulphates—as indicating absence of abnormal intestinal putrefaction—along with the other signs and symptoms of this type of case is definitely in favour of tuberculous infection.

As regards the opsonic index, elaborate technique and constant practice, associated, perhaps, with incommensurate results, also place this test, to a certain extent, outside the realm of practical medicine. So far, however, as my experience goes, the opsonic index to tubercle in early cases of glandular infection is consistently low, and I am certainly prepared to deny that this test, efficiently carried out, is valueless.

For the majority of patients, however, the chief criteria of the condition are the powers of fat digestion and von Pirquet's cutaneous tuberculin test.

In early childhood the power of digesting and assimilating quantities of fat is very considerable, and in the early stage of tuberculous infection this power is, as a rule, not markedly affected. The diet of both types of these children of whom I speak varies enormously, and in many cases but little is taken; but in tuberculous cases this small amount not infrequently consists of milk, eggs, and other fatty food. Again, cod-liver oil emulsion is usually readily taken in early tuberculous infection, and does good even in cases where previously it could not be borne, and this is seen very strikingly in cases which merge into tuberculosis from this form of chronic dyspepsia.

Want of power to deal with fat is, on the other hand, one of the outstanding characteristics of this form of dyspepsia. It may be that, owing to conditions in the gastro-enteric tract, fat is only imperfectly digested and is not absorbed, or it may be that fat assimilation is imperfect, and, according as one or other condition predominates, the course of the condition may tend towards mucous disease, acidosis, etc., but in all there is inability to utilize fat, the original exciting cause of the condition varying very widely.

As regards the tests with tuberculin, the evidence of many observers, and more particularly the results of Holt, seem to show that the cutaneous test of von Pirquet is as reliable as any, while unattended by the constitutional and local disabilities of respectively the tests by injection and by Calmette's method.

Personally, I am inclined to attach marked value on the von Pirquet reaction in cases of this description. In its employment I have used both human and bovine tuberculin; in some instances the reactions of the two have corresponded, in some they have not. A positive reaction to either I consider a positive result.

Further than being a point of interest in the etiology, and possibly in the prognosis, I do not think it matters which tuberculin gives the reaction; it is no indication as regards the specific form of tuberculin treatment.

The tuberculous focus may be in the cervical, thoracic, or abdominal glands, or elsewhere; a positive reaction is a definite danger signal; in young children of this type it indicates the necessity of active antituberculous treatment.

Owing to the very various routes by which a child may arrive at the condition of chronic dyspepsia, it follows that treatment in different cases must vary considerably. By whatever route the condition is attained, there are, however, certain points in treatment common to all, and certain points of marked difference in this treatment from that of early tubercle infection.

Each case has, of course, to be treated on its own merits, but for all prolonged and careful dieting is necessary. The condition may have originated with irregular meals and excess of carbohydrate food, or a diet rich in protein, or an excessive supply of fat. But now, for all cases, the diet is to be cut down; rest is essential for the digestive apparatus, and to regain their normal power the duties of the various organs must be well within their diminished capacity. Rest in bed is generally desirable, but not always obtainable, and small doses of calomel to begin with, and later of strychnine, are invariably of value. A good drink of water at bed time, a cold bath in the morning, alkalis in some cases, thyroid extract in others, and butter-milk where it can be taken, are among the measures most generally beneficial. Absence from school and change of air are always desirable.

Compared with such a scheme of treatment, that of early tubercle infection is markedly different. The diet should be free; fat and animal protein specially should be given as freely as is found possible. In many cases, an occasional dose of calomel and the daily administration—specially in cases with high amount of ethereal sulphates in the urine—of butter-milk is of marked value; fresh air is, of course, of the utmost importance. Great care must be taken in the prevention of sources of glandular irritation and infection, and the teeth, mouth, throat, ears, etc., must be closely attended to.

Finally, all such children should be treated with tuberculin. My own impressions as regards the administration of tuberculin in obviously glandular infections—mainly abdominal or cervical glands—or in cases which by the previous methods of diagnosis, I have diagnosed as latent tuberculosis—and I think these are chiefly glandular—are:

1. That this treatment is very unsafe when large doses are employed or when the temperature is unsteady.
2. That it is quite safe in the minute doses hereafter mentioned, when commenced with a practically normal temperature and when the patient is kept under observation.
3. That in many cases tuberculin treatment appears to have no definite effect upon the condition one way or another.
4. That in cases in which treatment by rest, climate, feeding, and careful nursing can be employed, improvement by these means alone is usually so marked that it is impossible to attribute to tuberculin, when given in these cases, its due meed of praise or to judge whether it takes any part whatever in the improvement.
5. That, however, when treatment by rest, climate, feeding, and careful nursing cannot be properly adopted, tuberculin is often of very marked value. These are the cases which otherwise do badly, and tuberculin treatment is with them of the greatest importance.
6. That T.R. is as a rule preferable to P.T.R.
7. That for routine use the method of hypodermic injection is greatly superior to that of oral administration; the effect of giving tuberculin by the mouth varies very much.

These impressions are derived from the treatment of about 100 cases during the past three years. At the commencement I used the opsonic index as a guide, but early found it impossible, and I think unnecessary, to take the index in selected cases such as these. The condition of the temperature is, I think, a sufficient guide for the initial administration and the clinical symptoms thereafter in relation to each injection.

The forms of tuberculin I have used have been Koch's new tuberculin, T.R., and the corresponding bovine tuberculin, P.T.R. The two varieties I originally employed in order to determine their varying results in cases showing different reactions to von Pirquet's test with human and bovine tuberculin. I have come to the conclusion, however, that, no matter to which strain of bacillus von Pirquet's reaction is positive, T.R. is the tuberculin of the greater therapeutic value.

The tuberculin was given hypodermically and by the mouth. By the mouth the doses I gave varied from $\frac{1}{1000}$ of a milligram to $\frac{1}{250}$ of a milligram, and the results I considered very disappointing; only very occasionally was any satisfactory result noticeable. By hypodermic injection the initial dose varied from $\frac{1}{15000}$ of a milligram to an infant 9 months old to $\frac{1}{3000}$ of a milligram to a child of 12 years.

The injections were repeated weekly or fortnightly and the dose increased at long intervals and by very minute amounts, the rapidity and amount of increase desirable being gauged by the clinical condition.

In all cases, diminished vitality or health—apparent in any manner whatever—during the few days following an injection was considered a sign either to diminish the dose or increase the intervals between doses, the conditions aimed at being that after each injection the child should continue steady improvement or show a step in advance. In several instances a child while under tuberculin treatment had apparently attained sound health. The tuberculin treatment was stopped for two or three months; the child relapsed, only again to improve on the renewal of the injections.

## DRIED MILK AS A FOOD FOR INFANTS.

By C. KILLICK MILLARD, M.D., D.Sc.,
MEDICAL OFFICER OF HEALTH, LEICESTER.

DRIED milk is the residue left after the natural moisture in milk has been evaporated. The process of manufacture usually adopted is that invented some years ago by Drs. Just and Hatmaker and known by their names. Fresh milk is fed in a continuous stream on to revolving heated cylinders on which it forms a thin film. These cylinders are heated by steam at about 40 lb. pressure; the surface attains a temperature of, say, 250° F., and the moisture in the film of milk is almost instantly dispelled. The dried film is automatically detached from the cylinders by knife edges, and falls off into receptacles below. The small amount of moisture not evaporated is taken up by the milk sugar as water of crystallization. The dried milk is subsequently passed through a sieve to ensure uniform pulverization, and is obtained as a coarse granular cream-coloured powder, practically sterile, which, in airtight packages, will keep almost indefinitely. I have kept samples in my laboratory for over a year and found them still good.

When again mixed with the equivalent quantity of water about 60 per cent. is found to be soluble, the remainder being readily suspended. The resultant fluid is slightly different in consistency from fresh milk; the flavour is altered, although by no means unpleasant, and the fat tends to separate and to rise to the surface, owing to the cream globules having been ruptured. To what extent the chemical composition is affected is a little uncertain. The relative proportions of the main groups of constituents—proteids, fat, milk sugar, and salts—remain, as we should expect, practically unchanged; but there is, no doubt, some interference with the exact composition of the more complex albuminoids and enzymes, similar to what occurs when fresh milk is boiled. Owing, however, to the extremely short time—only a matter of seconds—during which the heat is applied, which is one of the essential principles of the Just-Hatmaker process, it is possible that the alteration in chemical composition is less than in the ordinary process of boiling milk. The heating process destroys all tubercle bacilli and other pathogenic organisms.

The process of manufacture is not expensive, and, owing to the saving on carriage, dried milk, if manufactured in localities where milk is cheap, can be sold wholesale at a price very little above the price of fresh milk. If retailed in small quantities in tins the price is, of course, increased.

### USE OF DRIED MILK IN LEICESTER.

The use of dried milk at the Leicester Corporation Infants' Milk Dépôt was begun about eighteen months ago. I was somewhat prejudiced against it, disliking the idea of abandoning fresh milk with its antiscorbutic properties, and only very limited use was at first made of it. It was very soon discovered, however, that dried milk had one most important advantage—greater digestibility—and that many infants would retain it and at once begin to thrive who previously had been continually subject to vomiting after each feed and in consequence were making little or no progress. This difference in digestibility would seem to be largely accounted for by the character of the curd formed in the stomach; it does not tend to run into hard cheesy masses, as is the case with ordinary cow's milk. The babies certainly like the milk. In my experience they never refuse it when offered it for the first time; and it is quite common to hear that they show a decided preference for it, and after getting used to it they will sometimes refuse ordinary milk.

As a consequence of these good results it gradually became our practice to order dried milk in all cases where infants were not thriving on the humanized bottled milk, but it was found that once a baby had been put on dried milk it was very seldom that the mother wished to go back to the humanized milk. Indeed, with the mother dried milk has been very popular from the first. After a time requests from neighbours began to be received that their babies should also be put on dried milk, and medical practitioners began to specify dried milk when sending cases to the dépôt.

A careful watch has been kept for any bad effects, such as scurvy or rickets, but although I have had experience of some hundreds of infants fed on it for periods ranging up to ten months, or even longer, so far none have been seen. Inquiries have also been made from fifteen medical men practising in the districts whence most of the cases have been drawn, and their replies in all cases were favourable to the use of dried milk, and support the conclusions that no bad effects have followed. Inquiries, too, have been made from the mothers of babies fed on the dried milk to ascertain if the health had continued good after giving up the milk, but nothing pointing to bad after-effects has been discovered.

As for rickets, it was not to be expected, having regard to modern views as to the etiology of this affection, that

the use of dried milk would predispose to it, provided the proportion of fat was adequate. Whilst as regards scurvy the precaution has been taken of advising the routine administration of fresh fruit juice every other day as an antiscorbutic. There is reason to think, however, that this advice has not always been very carefully followed, nor is it certain how far it is necessary. The question as to what extent the antiscorbutic properties of fresh milk are destroyed in the Just-Hatmaker process can only be decided by practical experience. It is, of course, a very controversial question how far the use of ordinary sterilized milk predisposes to scurvy. Whilst many writers have insisted upon this supposed danger very strongly, others, like the late Professor Budin, of Paris, who made use of sterilized milk on a very large scale for many years, take the opposite view. The experience of infants' milk dépôts, both in this country and abroad, at almost all of which sterilized milk is used, and has been used for years, is to the same effect. It seems a reasonable conclusion, therefore, that the infantile scurvy danger is rather of the nature of a bogey, and not of much practical importance.

At the Leicester Infants' Milk Dépôt two grades of milk are used: one, "full-cream," containing the whole of the fat present in the original milk, amounting to about 26 per cent. of the dried milk; and a slightly less rich grade—threequarters cream—which only contains about 20 per cent. of fat. The latter is used for babies under 6 months old. An addition of 10 per cent. of sugar is made to both grades.

The milk is supplied in airtight tins, holding about 1 lb. A special metallic scoop or gauge is supplied to each customer, and the directions specify so many scoopfuls of dried milk to so many tablespoonfuls of water, varying with the age of the infant. The milk is prepared for use by stirring in the requisite quantity of warm (not boiling) water, and it is then ready for use with any ordinary feeding bottle. Only enough for one meal is prepared at a time.

At the present time at the Leicester Infants' Milk Dépôt dried milk has almost entirely superseded the "humanized" milk, about 200 infants out of 230 now on the books being fed on it. In addition to its intrinsic merits as a food for infants, it has the important practical advantage over humanized milk of being much less expensive. The latter, as is usual at infants' milk dépôts, is supplied on the principle of a separate feed in a separate bottle. This method, whilst it secures uniformity and appropriateness in the amount of each feed, in the number of feeds per day, in the strength of the milk, and in freedom from contamination, is very expensive, owing to the great amount of labour entailed in bottling, etc., and to the loss incurred on broken bottles, and as it is necessary to keep the price within reach of the poor it was found that a loss was incurred on every bottle of milk supplied, in addition to the cost of upkeep of the dépôt. Also, owing to the milk having to be fetched daily (or delivery paid for as an extra), poor persons living at a distance from the dépôt found the milk beyond their reach.

With dried milk both these objections are obviated. It can be sold at cost price, and, as a week's supply or more can be fetched at a time, distance from the dépôt is of little moment.

The advantages of dried milk as a food for infants may be summarized as follows:

1. *Ease of digestion*—milk not "sicked up," as is so often the case with fresh milk, however modified.
2. *Bacterial purity*—freedom from tubercle bacilli or contamination by flies.
3. *Conservability*—no "souring" in hot weather.
4. *Cheapness*—no waste.
5. *Convenience*—always ready for use, no waiting for the milkman.
6. *Palatableness*—babies love it.

Its disadvantages are of a theoretical nature, and consist in the presumed destruction of the antiscorbutic properties of fresh milk. This, however, can be compensated, if thought necessary, by administration of fruit juice. For domestic purposes, apart from infant feeding, dried milk has distinct limitations as a substitute for fresh milk, as, owing to its taste, it is not so suitable for adding to tea or coffee.

An important consideration remains to be referred to. One reason, no doubt, why dried milk is so popular with the mothers is that it possesses all the convenience of the patent "food." As a matter of fact, they like to refer to it as a "food" rather than as milk. Yet it is obvious that dried milk, being after all "only milk," stands in an entirely different category from all patent foods prepared from cereals. The serious objections rightly entertained to the wholesale use of these proprietary foods, which inevitably tend to supplant milk in the infant's dietary, sometimes almost entirely, obviously do not apply to dried milk. It may prove, therefore, to be a very real blessing to the infant population if dried milk should come to supplant patent foods of the class referred to.

## ON THE THERAPEUTIC VALUE OF CARBON DIOXIDE SNOW IN THE TREATMENT OF VASCULAR NAEVI, MOLES, ETC.*

BY

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THE value of cold as a local therapeutic agent has long been recognized, but until recently its field of utility in the treatment of skin affections has been limited and practically confined to its employment as a local anaesthetic. With the discovery of liquid air and the intense cold (−250° C.) associated with it, new therapeutic possibilities presented themselves. It was recognized early in America that in liquid air we had a valuable addition to our local destructive agents, and a remedy which might be of great service in reducing or removing such superficial lesions of the skin as vascular naevi and moles. It was found that the application of liquid air caused an immediate freezing of the underlying skin, succeeded some hours later by an inflammatory reaction, and that if the application lasted only a few seconds complete recovery followed, while if it was more prolonged a destruction of the tissue would occur with ulceration or sloughing. Inflammation properly controlled is followed by a process of repair and a rebuilding through the formation of new fibrous tissue. Liquid air, if applied for a few seconds, is capable of producing an inflammatory reaction and subsequent repair, and of replacing certain superficial skin lesions by a scar which is hardly appreciable.

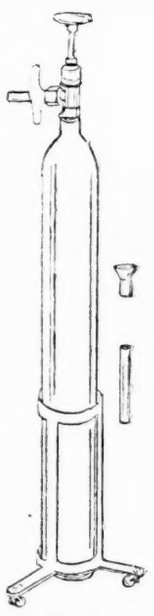

Fig. 1

At the July meeting of the Dermatological Section of the Royal Society of Medicine, the late Dr. Radcliffe Crocker showed a series of cases of naevi, lupus vulgaris, etc., which he had treated with benefit by liquid air, and conclusively demonstrated the value of this method of treatment. There were certain disadvantages, however, associated with its employment which detracted from its utility—namely, the costliness of liquid air, and the difficulty of obtaining it, and of definitely restricting its area of action by the method adopted—namely, of dipping a pad of cotton-wool on the end of a rod into the liquid air and applying it to the affected skin. Previous to this an excellent substitute for liquid air had been found in carbon dioxide snow. This material, though not so cold—its temperature being about −90° C.—has all the advantages of liquid air and none of its disadvantages, for it is easily obtainable, cheap, and is capable of being applied in the most definite manner. One of the first to use carbon dioxide for therapeutic purposes was Dr. Allen Pusey, of Chicago, who described the method he adopted in 1908.[1] Three years before this Juliusberg had employed carbon dioxide for local treatment in the form of a spray; but, so far as I am

* Being a demonstration given at Charing Cross Hospital on Thursday, November 25th, 1909.

aware, Pusey first used it in the form of snow, a method which has certain distinct advantages over the spray.

In the department at Charing Cross Hospital under my charge I have been employing carbon dioxide snow since March, 1909, and have treated by it a considerable number of cases of vascular naevi, moles, lupus vulgaris, lupus erythematosus, etc. At the meeting of the Dermatological Section in July, already referred to, I demonstrated a series of cases successfully treated by it, and since then further experience has only more firmly convinced me of its value.

Fig. 2.—Case I. Reproduction of water-colour drawing.

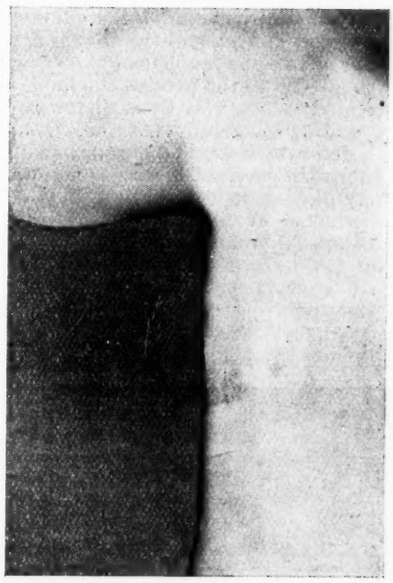

Fig. 3.—Case I. From a photograph.

### METHOD.

The procedure adopted has been as far as possible that described by Pusey, but never having seen the application of carbon dioxide before I attempted to use it, I encountered certain difficulties both in obtaining the snow and in applying it satisfactorily. The following method was eventually arrived at. An iron cylinder containing 7 lb. of liquid carbon dioxide was obtained (Fig. 1), fitted with a central tube so that the cylinder might be placed vertically in an iron stand while the carbon dioxide was allowed to discharge itself. A cylinder of this size is not too heavy, and can easily be lifted. The nozzle of the cylinder is horizontal, and the key is at the top. When the key is turned so as to open the valve, a jet of carbon dioxide rushes out horizontally with great force, and is quickly volatilized. The snow is obtained by allowing the carbon dioxide to play on a piece of baize folded in the form of a conical sugar bag about 9 in. long. This is held in the left hand over the nozzle, so that the nozzle is well inside the bag, without being in contact with the baize, and the controlling key is turned gently by the right hand. The carbon dioxide jet is allowed to play into the bag for 15 to 30 seconds or longer according to the amount of snow required. The baize is then spread out on a table, and is found to be thickly coated with fine snow. The snow is scraped off with a teaspoon, and the requisite applicator filled with it. The applicators are funnel-shaped, like aural specula, and are made of vulcanite. Their diameter at the narrow end varies from ¼ in. to 1 in., and they are fitted with rod-shaped plungers, by means of which the snow is pressed down. When filled, the applicator is transferred to the lesion to be treated, so that the snow is in contact with the skin, the applicator being held firmly by the left hand, while the plunger is held by the right hand and the requisite amount of pressure exerted. During this procedure, it is necessary to wear a glove on the left hand to protect it from the extreme cold.

Fig. 4.—Case V. Reproduction of water-colour drawing.

Fig. 5.—Case V. From a photograph.

The effect of the snow on the tissue is dependent on the length of the exposure and the degree of pressure. No hard and fast rules can be laid down as a guide in these matters, as each case requires to be treated on its merits, but a short experience will enable the operator to judge of them. The degree of pressure should be just sufficient to cause a slight depression in the frozen tissue when the applicator has been removed. After an application of five seconds the underlying skin is frozen into a solid white disc, about ⅛ in. thick. This thaws in about a minute. Some hours afterwards, it may be ten or twelve, the inflammatory reaction sets in, and a blister may form. This subsides, and perfect healing takes place in a few days. Exposures of healthy skin up to thirty seconds' duration are followed by complete healing; should the exposure be prolonged to a minute or longer sloughing is apt to occur with subsequent scarring. In the case of soft lesions, such as vascular naevi, the exposure should not exceed thirty seconds, so as to avoid scarring; in the case of hard lesions, such as warts, rodent ulcers, etc., a more prolonged exposure is indicated, as it is the destructive effect which is chiefly required. If the lesion to be treated be greater than the diameter of the largest applicator, it is attacked piecemeal, or a piece of thin lead is cut the size of the lesion and placed between it and the applicator, as the metal conducts the cold, and by it irregularly shaped lesions can be treated exactly. When lead is interposed a longer exposure is necessary than when the snow is applied directly to the skin. The application is not unbearably painful, and no anaesthetic is required, the cold itself having an anaesthetic action. The amount of pain varies according to the situation of the lesion. I have noticed, also, that some patients scarcely feel it sore, while others have said that it was as painful as a fine-pointed actual cautery. When the reaction sets in there is the usual discomfort associated with inflammation. Should the application result in vesication and breaking of the skin it is advisable to dress the part with a mild antiseptic ointment to prevent contamination with pyogenetic micro-organisms.

### LESIONS TREATED.

*Naevi.*

The lesions in which I have found this treatment to act most satisfactorily are the common raised angiomatous

naevi of infants. The only other treatment which can compare with it in my opinion is that by radium. So long as our chief methods of dealing with these naevi were excision, cauterization, and electrolysis, it was doubtful whether it was advisable to treat them at all, as in a considerable number of cases they eventually disappeared spontaneously; and it was only when one's hands were forced by the anxiety of the parents that one felt warranted in subjecting an infant to the risks of electrolysis under a general anaesthetic. By the introduction of these newer methods all such risks are at an end, and the naevus can be easily removed by one or two applications of the snow, with little or no scarring. Up to the present the largest raised naevus I have treated successfully by the snow has been about 2 in. long and 1½ in. broad; but there is no limit to the size of lesion which could be attacked in this way. When the naevus is very soft a single exposure of twenty seconds may suffice to remove it; if it be harder owing to the presence of fibrous tissue, several exposures at intervals of ten days may be required.

It is advisable to let the inflammatory reaction completely subside before a second application is made, as this may prove to be unnecessary, as a process of involution is set up which continues for a considerable time after the acute inflammation has gone down. One

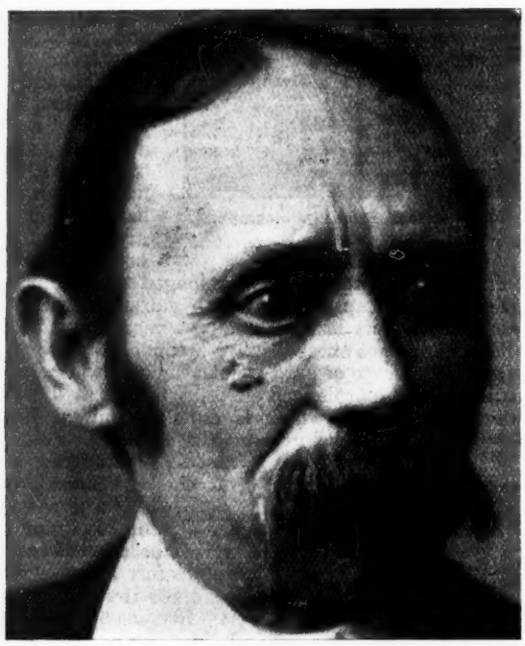

Fig 6.

of the chief merits of the treatment is the nature of the resultant scar, if it can be called a scar, for in many of the cases it is difficult to detect any cicatrix. In one instance a girl aged 5 weeks (Case II), had a raised naevus in the centre of the breast; it was removed by one exposure to the snow, and the scar was so slight that the nipple in the centre of it seemed to be preserved.

CASE I.

Kathleen B., aged 5 months, raised naevus 1½ in. in length, bright red in colour, situated on the right breast, including nipple (Fig. 2). Snow applied for 30 seconds on June 5th, 22nd, and 29th. A severe reaction occurred after the last exposure, followed by disappearance of most of the naevoid tissue. When seen in October the resultant scar was little noticeable, and the nipple was apparently preserved (see Fig. 3).

CASE II.

B. D., aged 5 weeks; raised vascular naevus, size of sixpence, bright red in colour, situated in centre of right breast, including the nipple. Case shown at the Dermatological Section, Royal Society of Medicine, July 15th, 1909.

A single exposure to carbon dioxide snow was given on April 5th. A marked reaction occurred with the formation of a bulla the same night. When the reaction subsided a fortnight later the naevoid tissue had gone, there was scarcely any scar, the nipple itself not being destroyed.

CASE III.

F. A., aged 5 months; fibrous pyriform vascular naevus about the size of a large pea situated behind the left auricle.

Snow applications were given, of 30 seconds to one minute, on May 18th, 25th, June 1st and 15th. The lesion diminished slowly under the treatment, but as it did not react so satisfactorily as the soft flat lesions, a ligature was tied round it on June 15th. When seen in October it had disappeared, leaving a good scar. Case shown at the Dermatological Section, Royal Society of Medicine, July 15th, 1909.

The advantages of the snow treatment of raised vascular naevi over that by electrolysis, cauterization, etc., are so obvious that it is unnecessary to labour them further, but in the case of radium the choice is more difficult. The following cases treated by radium will serve for comparison:

CASE IV.

G. C., aged 14 months; sent to Charing Cross Hospital by Dr. Peter Harper, with a raised vascular naevus the size of a threepenny piece on the skin of the upper lip on the right side of the middle line.

Exposed to 5 mg. of radium bromide of 1,800,000 activity spread out and screened by a thin sheet of mica and a thin layer of indiarubber, for fifteen minutes on March 23rd, April 6th, May 4th, and May 18th. By the end of July the naevoid tissue had almost completely gone and the scar was all that could be desired. The same result might have been obtained more quickly even by a single long exposure, but as the object was to leave as little scar as possible the more tedious method was adopted, to avoid the risk of a reaction with subsequent telangiectasis.

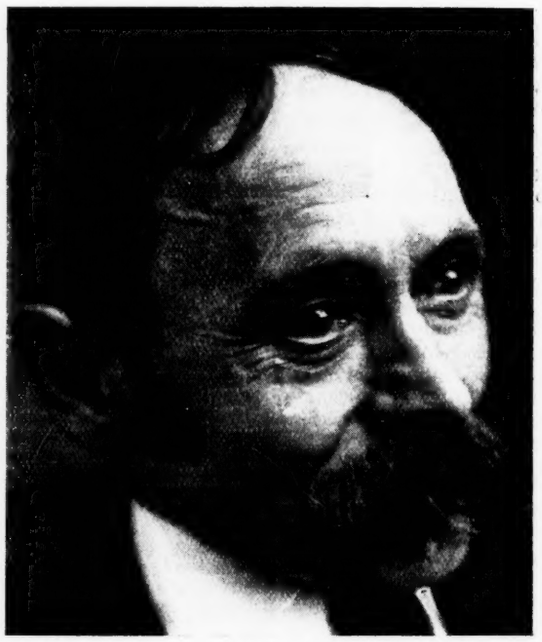

Fig. 7.

So far as the resultant scar is concerned, there is in my experience little to choose between the snow treatment and radium, and radium has the advantage of being absolutely painless. On the other hand, the carbon dioxide snow acts far more rapidly, for by it a small raised naevus may be removed by an application of half a minute, while the same lesion might require an exposure to radium of an hour or longer, and it is much less costly, as the amount of snow required for an exposure costs a fraction of a penny. There is another great advantage which the snow treatment has over that by radium—namely, that by it there is no danger of producing a scar with telangiectases, such as may occur after a radium exposure if it has been excessive.

Several cases of "*port-wine-stain*" naevi have been treated at Charing Cross Hospital by the snow, but so far without marked improvement.

*Telangiectatic or stellate naevi* can be removed by a single application of the carbon dioxide snow of five seconds, but the treatment has no advantage over that by a fine-pointed cautery or an electrolytic needle.

*Pigmented and Hairy Moles.*

These lesions can be appreciably reduced, and in some cases satisfactorily removed, by the snow, with a cosmetic result which is superior to other forms of treatment. The following notes of a case will serve to illustrate this:

CASE V.

W. T., aged 10 years; hairy mole like a mouse, 1½ in. long and ¾ in. broad on left cheek (Fig. 4).

Exposed piecemeal to the snow for five seconds on March 16th. A reaction occurred next day, followed by a marked improvement, and the lesion became less prominent and paler. An application of forty seconds was given on April 15th, and as a result the pigmentation and much of the hair was destroyed.

Subsequent applications were given on July 6th of forty seconds, August 24th of sixty seconds, and October 12th of twenty seconds. The condition on November 23rd is as shown in the illustration (Fig. 5). The lesion has been replaced by a supple, little disfiguring scar, and almost all the pigmentation has gone. A certain amount of thickening still persists towards the lower edge. The treatment of the case is not yet completed, and further applications will be given to remove the slight thickening and to destroy the remaining hairs.

*Lupus Vulgaris.*

A number of cases of lupus vulgaris have been subjected to this treatment, and where the lesions are superficial in type I have found it to be of definite value, but in deep-seated lesions it seems to be less effective and penetrating than Finsen light.

*Lupus Erythematosus.*

I have treated several cases of lupus erythematosus of the chronic discoid variety by this method, and though they have all benefited by it, and none of them have been aggravated, I am not convinced that it is as good a local remedy for this disease as zinc ionization. The following is an illustrative case:

R. S., aged 49, with a patch of lupus erythematosus on the bridge of the nose extending towards the left cheek and another patch in front of the left ear. It was exposed to the snow piecemeal for five seconds on July 21st. A sharp reaction occurred, which on subsiding left considerable improvement.

A second application was made on October 9th. On November 23rd a great improvement was noted: the greater part of the nasal lesion had healed with slight scarring, and the patient said that the affected skin felt much more comfortable.

*Rodent Ulcers.*

Carbon dioxide snow is capable of destroying rodent ulcers provided they are superficial and do not involve deep structures. In a case of such a lesion situated on the cheek, an excellent result was obtained (Figs. 6 and 7), but in this affection the treatment does not seem to me to be much better than the careful application of the actual cautery, and where the lesions penetrate deeply it is of less value than radium.

Sufficient has been said to indicate the therapeutic value and possibilities of this new agent. In conclusion I must take this opportunity of thanking my clinical assistant, Dr. Dyce Fraser, for the valuable help he has given me in the treatment of these cases.

REFERENCE.

[1] *Berliner klinische Wochenschrift.*

## SOME RESULTS OBTAINED FROM THE LOCAL APPLICATION OF SOLID CARBON DIOXIDE.

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THERE is some difference of opinion as to the relative value of solid carbon dioxide and liquid air in the treatment of naevi and other cutaneous lesions, and while I do not dispute the claims on behalf of the latter agent made by those who have had more experience with it than I have, yet I venture to say that the more they use carbon dioxide, properly compressed into a hard, firm crayon, the more they will like it, and even prefer it to any other agent.

Liquid air certainly possesses the quality of extreme cold far beyond that of solid carbon dioxide or anything else at present available; but, in my opinion, the temperature of solid carbon dioxide, equivalent to 142° of frost, is low enough for anything required in therapeutics, and yet not so low but that it is perfectly manageable and easy to control. In addition to all this, carbon dioxide can be kept in the house ready for use at any time, and no more need be taken from the cylinder than is necessary for the case in hand. There is no way of storing liquid air, and when any is wanted it is necessary to give some hours' notice, and it must be used within a very few hours of its preparation. These conditions are not always convenient, and it is not given to every one to reside in the near neighbourhood of a laboratory where liquid air is prepared. A cylinder of the liquefied carbon dioxide (from which the solid crayon is prepared) can be sent anywhere, to be used at convenience, and now that small cylinders of $CO_2$ are being used by motorists for inflating tyres it is more easy than ever to obtain and use this valuable agent.

The mode of preparing and using solid carbon dioxide I have more or less fully described in another paper,[1] and in this article I propose to give the results I have obtained in a series of 123 cases. This number does not include all the cases I have treated—the total would be about 200—as at times it is very difficult to get all the cases written up. It takes no account of a number that I have treated at the West London Hospital, through the kindness of Dr. Abraham, nor does it include those that have come to me in the course of my private practice. Were all these included, the effect would be to make the general result more favourable than it is. It does include practically all the cases I have treated from the beginning, when I had everything to learn, and no past experience to guide me clear of pitfalls—cases where two or more applications were necessary, that now would be treated successfully with one. The faults were found to be due, for the most part, to an improper degree of pressure, and, to a less extent, to errors in the time of the application. If the pressure is too light, the result is incomplete; if too heavy, the reaction is needlessly severe, and some necrosis may possibly follow.

The 123 cases were made up as follows:

| | |
|---|---|
| Naevi ... ... ... ... ... | 105 |
| Common warts ... ... ... ... | 12 |
| Lupus vulgaris ... ... ... ... | 1 |
| Lupus erythematosus ... ... ... | 1 |
| Moles ... ... ... ... ... | 4 |
| | 123 |

*Lupus.*

The two cases of lupus were sent to me in the hospital for trial by my colleague, Dr. Sequeira, before he took up the method himself. The case of lupus vulgaris was not very suitable; the patch was near the bend of the elbow, where it was difficult to make firm pressure, and the great amount of movement incidental to the part made healing difficult. It was not successful. No one, of course, would draw any definite conclusions from this, and I may say that since then I have treated some patches on the inner side of a child's foot with, so far as it is possible to judge at present, very satisfactory results, but it is too soon to draw any conclusions as to the efficacy of carbon dioxide in the treatment of this disease. The case of lupus erythematosus was a fairly extensive one. The disease affected the face, back of the pelvis, and both anterior tibial regions. There was a very marked improvement after the reaction from each application had subsided. This, however, is no more than can be said for a number of other methods that are in more or less regular use for the treatment of this troublesome disease. Here again further investigation is called for before we claim too much or too little.

*Moles.*

Only 4 cases were treated, but the results have been highly satisfactory; 3 were cured, leaving a very small scar that is almost imperceptible, the result in each case being highly gratifying to the patient as well as to myself. The fourth case was improved but it was one of unusual difficulty. It was, in fact, an exaggeration and pigmentation of a little boy's left eyebrow. Its size and hairy growth were such as one would find on a full-grown man. The idea of the treatment was to destroy a part only in order to bring it to a proper size and shape. It is noteworthy that hair is removed by the application, but it is too soon to say if the epilation will be permanent.

*Warts.*

The treatment here is very simple, and it is not necessary to time the application; in fact, the attempt to judge the proper dose by timing is doomed to failure. The chief disturbing factor is the very poor conducting properties of

the growth. The crayon of solid $CO_2$ is trimmed to a diameter corresponding to that of the growth. The application is made with firm pressure, and continued until a narrow ring of the healthy tissue around the base of the growth is white and frozen by conduction from the centre. Properly carried out in this way there should never be a failure in dealing with a common wart. In the reaction that ensues a blister is formed under the base of the wart, causing it to be thrown off. Twelve cases were treated in the series under consideration; 9 were completely cured, 2 are still under treatment, and 1 ceased attending. There was no reason to think that these last would not be equally successful under further treatment.

*Naevi.*

The 105 cases presented 129 naevi for treatment, which were made up as follows:

| | |
|---|---|
| Capillary ... ... ... ... ... | 85 |
| Cavernous ... ... ... ... | 32 |
| Capillary and cavernous (mixed) ... ... | 5 |
| Stellate ... ... ... ... ... | 1 |
| Lymphatic ... ... ... ... | 2 |
| Port-wine marks ... ... ... ... | 4 |
| | 129 |
| *Distribution:* | |
| Head and neck ... ... ... ... | 61 |
| Arms ... ... ... ... ... | 10 |
| Thorax ... ... ... ... ... | 21 |
| Abdomen ... ... ... ... ... | 16 |
| Pelvis ... ... ... ... ... | 6 |
| Perineum and genitals ... ... ... | 6 |
| Legs ... ... .. ... ... | 9 |
| | 129 |

Of the 85 capillary naevi, no less than 74 were cured by a single application of solid $CO_2$ lasting, on an average, forty seconds; 6 cases had two, 2 had three, and 2 had four applications; while 1 case was incompletely cured after three attempts and was finally finished off by electrolysis.

Of the 32 cavernous naevi, 20 were cured by one application, 4 had two, and 2 had three applications; 6 cases were incompletely cured or not benefited, and finally dealt with by electrolysis.

In all cases in which the capillary and cavernous varieties were coexistent the capillary part was treated by $CO_2$ and the rest by electrolysis. Of the whole series, 12 had finally to be dealt with by electrolysis. The stellate naevus and the two lymphatic naevi were all cured by a single application of $CO_2$.

At the time of writing, the cases of "port-wine mark" are still under treatment. These cases require much time whatever the mode of treatment employed, but I am convinced that in $CO_2$ we have a remedy better than any hitherto known, except perhaps radium, as I have seen equally good results from both. All the cases I have treated with $CO_2$ are doing exceedingly well, and the outlook is very hopeful. It is noteworthy that in treating cases of this kind the first application seems to have little or no influence in reducing the depth of colour, even after waiting three weeks. After the second application the effect is very marked, and may be sufficient.

It will be seen from the above results that, taking capillary naevi as they come, no less than 87 per cent. have been cured by a single application, and I venture to say that with greater experience an even higher percentage would be obtained were I starting a similar series again. As might be expected, the results in treating cavernous naevi were not so good, but even here the proportion cured by a single application was as high as 63 per cent.

Higher percentages of cures are, of course, possible and obtained by other methods, such as electrolysis and the cautery, but it must be remembered that with these a general anaesthetic is always necessary. No anaesthetic, local or general, is ever necessary with carbon dioxide, as the application is practically painless and of only a few seconds' duration. I have had children who never cried or moved during the application; this is, of course, exceptional, but it does show that the process cannot be a very severe one.

REFERENCE.
[1] *Lancet*, December 4th, 1909.

# THE CLINICAL ESTIMATION OF "ACIDOSIS."

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THE subject of acid intoxication is becoming daily of greater importance, it being more generally recognized as a terminal condition in a large number of diseases. Although it usually proves fatal, yet the occasional brilliant success which follows properly applied therapeutic measures must render welcome any means by which the condition may be recognized before it has reached a stage beyond hope of recovery. It seems desirable, therefore, to record some of the routine methods which have been made use of in the work of the Practical Medicine Laboratory of the University of Sheffield during recent months, from which results of considerable interest have been obtained. No originality is claimed for the methods here described. It is well recognized that acidosis may exist for years without any marked effect upon the general health, but, whilst at any time the acidosis may increase to such an extent as to become a positive danger and demand urgent treatment, yet the means at our disposal for knowing when that danger is imminent are as yet incomplete.

To remedy this defect it is necessary that a large number of cases should be examined and followed up for prolonged periods. It is therefore essential that such methods of examination should be used as will, whilst giving a good general idea of the state of metabolism, not be too complicated for general clinical use. The first requirement is a method which will show approximately the amount of organic acid in the urine. It has been assumed that in diabetes the $\beta$ oxybutyric acid is the factor which requires measurement, and various methods have been devised to do this. All of them, however, are either difficult to carry out or require expensive apparatus. The usual method of estimating the quantity from the difference between the values obtained for dextrose by titration and polarization respectively involves not only expensive apparatus, but the assumption that all the difference is due to the above acid—an assumption which seems somewhat unsafe in view of the fact that many cases of severe diabetes give a definite reaction for laevulose when tested by Seliwanoff's method. The other methods of extraction by ether are very tedious, and even that with the best apparatus (Lind's) is stated to require seven hours for complete extraction.

To obviate these difficulties we have used a modification of Folin's method for determining the total organic acidity of the urine. In this method all the organic acids are estimated together, including, therefore, uric and hippuric as well as the fatty acids. The latter, however, are so small in quantity that they may be neglected.

*Method.*

1. Take 20 c.cm. of urine. Dilute with water and add some crystals of neutral potassium oxalate and a few drops of alcoholic solution of phenolphthalein. Titrate with decinormal caustic soda solution until a definite red tinge appears. The number representing the total acidity is obtained as follows:

$$\frac{\text{C.cm. of } \frac{N}{10} \text{ caustic soda solution used}}{20 \text{ (c.cm. of urine)}} \times \text{Total number of c.cm. urine passed during 24 hours.}$$

The total acidity for twenty-four hours thus expressed in units of decinormal soda is due to acid salts and to organic acids not combined with alkalis or ammonia.

2. The titration is now carried a stage further by adding to the same urine mixture 2 c.cm. of previously neutralized commercial formalin. (The neutralization is easily done by adding phenolphthalein followed by dilute alkali until a pink colour appears.) In a few seconds the pink coloration of the mixture disappears. This is due to the fact that the ammonia present in the urine in combination with acids has united in a condensation reaction with the formaldehyde as hexamethylenetetramine. Thus the acid which was previously combined with this ammonia base has been set free, causing the disappearance of the pink colour. Further titration is now carried out with the same decinormal caustic soda solution until the pink colour reappears. The number of cubic centimetres of decinormal caustic soda solution used in this further titration represents the acidity of the urine which has been neutralized by the ammonia, and this is the factor which we require to determine the organic acids; it will be called the "ammonia acidity." Each cubic centimetre of decinormal caustic soda solution used in this second

titration represents 0.0014 gram of nitrogen in the form of ammonia.

3. The next step is to ascertain the "mineral acidity." This is obtained as follows: 20 c.cm. of urine are placed in a platinum crucible, dried and ashed, great care being taken to prevent the contents rising beyond a dull red heat. The mass is then dissolved in distilled water, and titrated with either decinormal acid or alkali as required. All the ammonia and organic acids have been driven off by the heat, leaving only the mineral bases and acids. The mineral acidity is then easily calculated by the following formula:

$$\frac{\text{No. of c.cm. of } \frac{N}{10} \text{ alkali (or acid) used}}{\text{No. of c.cm. of urine used (20)}} \times \text{Total No. of c.cm. of urine passed in 24 hours} = \text{Mineral acidity.}$$

In a normal urine the residue is acid, and the mineral acidity then gives a number expressed in cubic centimetres of decinormal alkali, and is marked in *plus* quantity; in cases of acidosis the ash is alkaline owing to the acids in the blood having combined with bases in the blood in accordance with the tendency of the blood to maintain its normal reaction, but the result in terms of decinormal acid solution is still called mineral acidity, but expressed in *minus* quantities.

**These estimations having been made, we are now able to calculate the organic acidity in terms of decinormal soda solution, according to the following formula:**

Ammonia acidity + total acidity − mineral acidity = organic acidity.

**The method is really quite simple. The only expensive part of the apparatus is the platinum crucible, but in cases of acidosis, where the ash is alkaline, a nickel crucible may be substituted; and, as a matter of fact, considerations of economy have compelled us to use a nickel crucible in our experiments.**

**By this method we can detect any perversion of ammonia or alkali excretion, and as it shows at once if the body is being drained of alkalis to any marked extent, it gives direct control of the most dangerous factor of acidosis (alkali starvation). It is desirable to estimate also the nitrogen content of the urine, and for this we have used the Kjeldahl method. By so doing we can obtain the ammonia-nitrogen coefficient, and see how the nitrogen distribution has been disturbed by the acidosis.**

**It may be objected that the Kjeldahl method is too cumbrous for general use, but it is so accurate and inclusive of all nitrogenous bodies that it demands a place in clinical medicine. In fact, in severe cases of diabetes it is absolutely indispensable, for it is now recognized that the nitrogen balance is of much greater importance than the sugar content from the point of view of prognosis and dietetic treatment. Given the apparatus and the place to accommodate it, we have found it only slightly more troublesome than the tricky aërometric determinations.**

**An estimation of the phosphorus excretion in the form of phosphates (reckoned as $P_2O_5$) is of value in showing how the basic phosphates are drained from the blood. The body seems to hold to its phosphorus salts until the very last, and any abnormal excretion is usually a sign of danger.**

**We have tried these methods in a variety of cases. The normal organic acidity is equivalent, according to Voegtlin, to about 300 units, the normal ammonia-nitrogen coefficient being 3 to 5 per cent.**

A case of cirrhosis of the liver with ascites, albuminuria, and gouty tophi gave the following figures: Quantity of urine 752 c.cm. Total acidity 176, ammonia nitrogen 0.2422 gram, mineral acidity 26, phosphates 1.69 gram, total organic acidity 375 units, total nitrogen 6.316 grams, ammonia-nitrogen coefficient 3.8 per cent. The acidosis is thus very slight, the ammonia-nitrogen coefficient not being disturbed. Up to six weeks later this man has had no clinical symptoms of toxaemia, his symptoms being mechanical (ascites).

Another man, with cirrhosis of the liver and ascites complicated with nephritis, gave the following figures: Quantity 454 c.cm., acidity 289, ammonia 0.6610 gram, mineral acidity −45, organic acidity 760, total nitrogen 6.356 grams, ammonia-nitrogen coefficient 10 per cent. There is here a definite acidosis, but we cannot say how much the ammonia increase was due to the liver insufficiency or to production of acids. After large doses of sodium bicarbonate the figures were: Quantity 482 c.cm., acidity 108, ammonia 0.5060 gram, mineral acidity −86.76, organic acidity 556.71, total nitrogen 7.155 grams, coefficient 7.07 per cent. As the phosphates and chlorides gave very low figures, we concluded that there was a retention of salts, including the alkalis, and that all attempts to treat the acidosis would be useless. This was the case, for the man died in coma two days after the last examination, and for twenty-four hours had complete suppression of urine.

Another earlier case of cirrhosis had severe ascites, which recurred after paracentesis; there was much emaciation and slight oedema of the legs. The ammonia coefficient was 5 per cent., and he recovered so much that he was able to return home. Unfortunately this was before we began to determine the organic acids.

**In diabetes some interesting results have been obtained. In this disease we have come to recognize that the deprivation of carbohydrates is not the only factor in treatment. Some authorities, in giving a prognosis, lay more stress on the relation of nitrogen intake to output than on the sugar excretion. There is no doubt that the attempt to remove glycosuria by dieting is apt in some cases to produce coma, whilst in others the results are most beneficial. As coma is due to acidosis we ought, by estimation of the organic acids in the urine, to be able to separate these two classes of cases in time to prevent coma. To the surgeon these facts are of interest, as it is not unlikely that the fatal results of operations on diabetics are seen when the effect of the operation has been to increase the organic acid or diminish its excretion beyond the danger line, near which line it may have been hovering for some time. The recognition of these cases would save the surgeon from operating on absolutely hopeless cases. We have been able to follow one case of diabetes after a severe operation.**

Mr. Miles Phillips, of the Jessop Hospital, Sheffield, kindly sent us specimens of the 24-hourly urine of a case of early carcinoma uteri in a fat glycosuric patient. On admission it had been found that there was 4 per cent. of sugar in the urine, but by a partial restriction of carbohydrate this had been reduced to 2 per cent. Before the operation it was only possible to obtain a 24-hour specimen for one day, but this urine gave the following data: Quantity 1,931 c.cm., acidity 621, ammonia 0.773 gram, mineral acidity −193, organic acidity 1,367, total nitrogen 16.49 grams, ammonia-nitrogen coefficient 4.6 per cent. As we knew that the organic acid could rise to above 4,000 units without coma we felt justified in saying that there would be no very great danger in the operation from the point of view of acidosis. For a few days after operation we were able to obtain 24 hourly specimens as the urine was removed by catheterization. The following are the figures obtained:

| Date. | Quantity. | Acidity. | Nitrogen as Ammonia. | Mineral Acidity. | Organic Acidity. | Nitrogen. | Co-efficient. | Phos-phates. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | p. cent | |
| 11th ... | 1931 | 621 | 0.773 | − 193 | 1367 | 16.49 | 4.6 | — |
| 14th* ... | — | — | — | — | — | — | — | — |
| 15th ... | 1050 | 903 | 0.933 | − 73.5 | 1643 | 16.75 | 5.5 | 4.25 |
| 16th ... | 965 | 458 | 1.0132 | − 28.95 | 1216 | 13.78 | 7.3 | 2.581 |
| 17th ... | 965 | 299 | 1.0402 | − 0 | 1041 | 12.00 | 8.6 | 1.582 |
| 18th ... | 852 | 340 | 0.9338 | − 17 | 1020 | 11.92 | 8.6 | 1.789 |
| 21st ... | 908 | 295 | 0.5021 | − 376 | 1030 | 9.2797 | 5.4 | 0.6719 |

* Vaginal hysterectomy.

**This case was undoubtedly, from the purely clinical point of view, a suitable case for operation, for it was not a severe case of diabetes. It furnishes, however, some indications, although not evidence which is truly scientific, as to the manner in which operation may affect a diabetic very seriously. For the first twenty-four hours the patient took no food of any kind. Yet we see that there was a large nitrogen excretion. The phosphates were also markedly increased. The urine was loaded with urates, and a quantitative estimation by the rough and ready method of Sicuriani gave 2.4 grams of uric acid. The coincident increase of phosphate and of uric acid was interpreted as an index of leucocyte destruction, and this was confirmed by the occurrence of slight pyrexia. As the ammonia coefficient was hardly increased, it was concluded that it was not an increase of organic acid which was depriving the body of the basic phosphates of the blood. As it is probable that in acidosis some of the acid is excreted in combination with the basic phosphates, this increased excretion due to the operation may deplete the body of phosphorus, and aid in the production of coma. It is of interest to note that "septic" operations are notoriously more dangerous than aseptic ones, and an increased drain of phosphates might supply a simple explanation. The excretion of phosphates afterwards became subnormal, particularly on the 21st, when sodium bicarbonate had been given. Although after the operation the urine became free from sugar, there was still an increase**

in the organic acidity above the normal. We have unfortunately no exact data as regards the food taken, but the gradual diminution of nitrogen coincidentally with the ingestion of more food, is an index that in this case nitrogenous metabolism was in a good condition, and that the patient was able to recuperate somewhat from the starvation incident to a severe operation. The fall in ammonia with the accompanying fall in mineral acidity was the result of giving sodium bicarbonate. As an example of a moderately severe case of diabetes we give the following data from a middle-aged woman who was on a diet almost free from carbohydrate.

Quantity 3,635 c.cm., acidity 981, ammonia 1.323 gram, mineral acidity 54.5, organic acidity 1,563, phosphates 3.44 grams P.O., total nitrogen 20.7195, ammonia-nitrogen coefficient 6.3 per cent.

As a contrast to this, take the following figures from the case of a young man who on a less restricted diet was passing exactly the same amount of urine:

Quantity 3,635, acidity 1,163, ammonia 3.56 grams, mineral acidity −181, organic acidity 3,944, phosphates 3.88, total nitrogen 17.78 grams, ammonia coefficient 20.06 per cent.

Some cases of diabetes have been followed for weeks, and interesting results have been obtained, which will be communicated in a joint paper with Dr. Arthur Hall.

In order to obtain figures for the changes occurring during starvation, a case of rectal "feeding" was examined:

The patient, a woman aged 30, had apparently a gastric neurosis, and one day, after severe retching and vomiting, had a slight attack of haematemesis. She was admitted and fed exclusively per rectum for seven days, at the end of which the following figures were obtained: Quantity 511 c.cm., acidity 183, ammonia 1.234 gram, mineral acidity −15, organic acidity 1,131, phosphates 0 82 grams, total nitrogen 4.57 grams, ammonia-nitrogen coefficient 26.7 per cent. This at once raised the question of pregnancy, but we were unable to decide with certainty as a vaginal examination was refused. Nothing could be felt from the abdomen, and there were no other indications of pregnancy.

The patient subsequently got quite well. The above cases afford illustrations of the general applications of this method, which in our opinion provides a rough estimate of several factors which are very important in the treatment of many conditions, and has the great advantage of being applicable to ordinary clinical work by a man with the usual training of a modern medical student. A vast field of work is open to the ordinary worker in such conditions as cirrhosis of the liver, eclampsia, pernicious vomiting of pregnancy, the effects of narcosis, many cases of so-called neuroses (which may, as in one described by Voegtlin, be accompanied by an acidosis due to some unknown fatty acid), rheumatoid arthritis (also sometimes accompanied by an acidosis), and the acute infections. Cases of marasmus in infants promise to afford very interesting results in view of recent Continental work. In fact, they seem to open the door for the admission of recent work in metabolism to the practice of the general physician.

It may be objected that the methods here described are not accurate. This objection applies especially to the method of ammonia determination, which was first published by Malfatti; it has been used also by other workers, and has been tested by Macpherson[1] against the Folin method. He found that it gave slightly higher results, and this may be due to the fact that it estimates at the same time the amino acids. The method of determining the organic acids has been adopted for original research on metabolism at the Johns Hopkins Hospital,[2] and has given satisfactory results. It has given results in our experience which accord with clinical observation, and is so easily applied that we draw attention to it in the hope that some highly qualified chemist may test its accuracy, and either condemn it or show that it gives results sufficiently accurate for clinical purposes.

I have great pleasure in thanking the medical staff of the Infirmary for permission to use their cases, and Dr. Hall for kind help in preparing this paper.

REFERENCES.

[1] Macpherson, BRITISH MEDICAL JOURNAL, March, 1909. [2] Reports from the Laboratories of the Johns Hopkins Hospital, July and August, 1907.

# Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL.

### LOCAL INJECTIONS OF STRYCHNINE IN NEURITIS.

I DESIRE in all humility to ask for a trial of the following simple treatment for neuritis—namely, the injection twice daily of $\frac{1}{100}$ gr. of strychnine in about 20 minims of sterilized water along the course of the affected nerve. The "cure" never in my experience takes longer than four weeks.

London, E.C. GEORGE H. R. DABBS, M.D.

### TREATMENT OF RINGWORM.

THE several antiseptics advocated for outward application in cases of ringworm are far from satisfactory, the prolonged duration of the disease proving their inefficiency. In dealing with the numerous cases of pediculosis in our fever wards we always employ the essential oil of sassafras, which, without exception, we find acts as a specific in such cases. When both pediculosis and ringworm occurred in the same scalp, it was noticed that the latter disease also reacted favourably to this preparation. This led me to test the possible usefulness of the oil for ordinary cases of ringworm, and so far the results have been most happy. The hair is cut closely around in order to identify the patches, the application of the oil being made twice a day by means of a camel-hair brush. This is continued for a few weeks, as the case indicates. No irritation is produced, while the preparation is most pleasant to use. Not only is the spread of the infection prevented, but that the fungus is being destroyed with certainty is recognized in two or three weeks, by commencing development of fine hairs.

In country practice, where treatment by *x* rays is impracticable, this method will, I venture to think, prove a valuable addition to the several means recommended by various authorities.

E. LYNN JENKINS, M.B., B Sc.,
Medical Officer, Isolation Hospital, Hinckley and District.

### CASE OF COMPLETE INVERSION OF THE UTERUS: REDUCTION AND RECOVERY.

MRS. H., aged 24, a primipara, was delivered with forceps at 7 p.m. on December 2nd, 1909, after a tedious labour, presentation being occipito-posterior. Delivery with forceps was easy, no severe traction being required. I waited expecting the contractions which would expel the placenta, and meantime used no undue traction on the cord nor pressure on the fundus. After an hour and twenty minutes contractions began, and increased in violence every minute, and latterly were extremely violent. The placenta began to be extruded, was finally expelled, and was followed by a hard mass and much haemorrhage. I placed my left hand on the abdomen, and found the uterus gone. I grasped the neck of the mass between my knitted fists and controlled the bleeding very largely. The patient was blanched and gasping, and the situation was alarming in the last degree. I sent for the assistance of my nearest colleague, and, pending his arrival, held the bleeding in check. I tried to separate the edges of the placenta where it was still undetached, and was astonished at the very close incorporation of placenta and uterus. Presently my colleague, Dr. Mackay, arrived. I requested him to sluice the mass with biniodide solution (1 in 1,000), and then to detach the placenta. He experienced the same difficulty, and remarked upon the extremely close adhesions. I still held the mass firmly by the neck and plugged the sinuses with my fingers as the difficult and tedious detachment of the placenta proceeded. When it had been finally accomplished as well as we could do it, the uterus was well washed with biniodide solution. My colleague gave chloroform. I squeezed the organ into a smaller volume as a first step and then tried reduction by inverting the fundus. It was almost at once evident that that method would not succeed for two reasons: (1) the tissue of the uterus was too friable and would not bear the pressure of the fingers; (2) it formed a very unnecessary bulk in passing the os.

I therefore passed the fingers and thumb of the right hand into the sulcus, and pressed gradually upward, and from side to side, kneading it the while. By this method I found reduction perfectly easy, and a few minutes sufficed to complete the operation.

The patient was in the last stages of exhaustion, having lost a great volume of blood and suffered a very severe shock. Rectal infusion of saline with infundibular extract had marvellous effects, and as she could from the first take small quantities of fluid by the mouth she made a good recovery, and is now (January 8th, 1910) up and walking about the house.

My reasons for publishing this case are its great rarity. Playfair says it was only met with once in 190,800 cases in the Rotunda. Again, there is a difference of opinion as to whether the placenta should be removed before or after reduction. In this particular case after-removal would have been wellnigh impossible, and I hardly think reduction with the mass attached could have been done. In removing the placenta before reduction we had the bleeding sinuses at once plugged, and saw all haemorrhage stopped before it was returned.

C. L. FRASER, F.R.C.P., F.R.C.S.Ed.

Berwick-on-Tweed.

## POISONING BY OIL OF EUCALYPTUS.

CASE I.—A man, married, aged 28, who had been suffering from a bad cold for several days, had been dosing himself for two or three days with oil of eucalyptus (2 to 3 drops), inhaling it from a pocket handkerchief, and sucking numerous eucalyptus and menthol gum lozenges. He had taken very little nourishment. Just before leaving his office, where he kept two bottles, one containing ammoniated tincture of quinine and the other oil of eucalyptus, he poured himself out a dose, as far as he remembers between two and three teaspoonfuls, of oil of eucalyptus, in mistake for the tincture. His home is situated ten to fifteen minutes' walk from his office, and he noticed nothing until he had been walking about ten minutes, when he was seized with sudden giddiness and faintness and ataxic gait, as though he had taken an excess of alcohol. He just managed to reach his house when the following symptoms showed themselves: His breathing became very laboured, and dyspnoea was very acute and distressing; his pupils were dilated, and pulse very weak and thready; the temperature was subnormal (95°–96° F.). Violent vomiting occurred before any emetic was given. His skin was a greenish-yellow colour, and he complained of a girdle-like constriction around the abdomen. He was very drowsy, and complained also of shivering and great cold, with intense frontal and occipital headache.

In about half an hour after taking the oil he had violent diarrhoea, with very painful and excessive micturition; the urine was dark in colour and the faeces smelt strongly of the oil. His skin also smelt of the oil. He was given a simple emetic, stimulants administered, and put to bed; four hot-water bottles and many warm thick blankets were used, as the collapse was severe. In the course of a few hours he felt better, the temperature rose, and the pulse became more satisfactory. For three days the skin retained the chlorotic hue, which only very gradually passed off. He was very depressed, his mental faculties were blurred, and he was unable to make any effort. Drowsiness continued for three days, and his gait was somewhat ataxic. For nearly a fortnight his breath, urine, faeces, and skin all smelt strongly of the oil, and it was a clear fortnight before he really felt well.

CASE II.—On January 5th at 11.50 p.m. I was called to see a girl, aged 18, who had swallowed about a drachm of eucalyptus oil, with which she had been rubbing her gums to allay toothache, as well as sucking lozenges. All the symptoms observed in the first case were present, but to a less degree—namely, intense headache, vomiting, collapse, bodily and mental; feeble pulse, subnormal temperature, girdle-like constriction around the abdomen, and dilated pupils.

In the BRITISH MEDICAL JOURNAL of December 4th, 1909, page 1656, it is stated that larger doses than ʒj to ʒij have been given, with little or no untoward effects; further, that mothers in certain districts have been accustomed to give ʒj doses for colds to their children. Evidently oil of eucalyptus (and in this case it was a quite pure essential oil of eucalyptus, being a sample from a well known first class London manufacturing company) does not affect all people alike. Its dosage, according to Mitchell Bruce and Hale White, is ½ minim to 3 minims only. It seems to be closely allied in composition to oil of turpentine, containing several isomeric terpenes, all having the formula of $C_{10}H_{16}$, and no doubt the fact that it causes similar respiratory, nervous, cardiac, gastric, and urogenital symptoms from over-dosage is due to these isomeric hydrocarbons.

Portsmouth. W. RONALD KIRKNESS, L.R.C.P., M.R.C.S.

## PERSISTENCE OF ITCH MITE INFECTION IN CLOTHES.

THE following data furnish evidence of the vital tenacity of itch mite removed from its human host.

The subject of the attack was a young adult, of cleanly habits, who had never been attacked before. The symptoms of the first attack began to manifest themselves early in February, 1909. Ordinary knitted woollen gloves were worn at the time, and they covered the infected areas on both wrists.

They were put away, and nothing further thought of them. The attack yielded readily to treatment. The gloves were again worn towards the end of October, 1909, and about four weeks later the disease again appeared in the same parts.

Hence (in the extremely probable event of the infected gloves being the cause of the second attack) one may fairly conclude that here we have an instance of itch mite infection preserving its vitality, apart from a human host, for over seven months.

JOHN N. LAIRD, M.A., M.D., D.P.H.Trin.Coll.Dub.

Macclesfield.

# Reports
ON
# MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

## MANCHESTER CHILDREN'S HOSPITAL, PENDLEBURY.

### DEPRESSED FRACTURE OF THE SKULL IN AN INFANT ONE DAY OLD: TREPHINING: RECOVERY.

(By J. W. BRIDE, M.B., B.S.Lond., M.B., Ch.B.Vict., Senior Resident Medical Officer.)

I AM indebted to the kindness of Mr. J. Howson Ray, Senior Surgeon to the Manchester Children's Hospital, for permission to publish the following case, which may be of interest as showing the ability of the new-born infant to undergo successfully a severe cranial operation.

The infant, aged 36 hours, was admitted on November 11th, 1909. It had been born at 1.30 a.m. on the previous day. The position was left occipito anterior; labour was rather tedious and considerable suprapubic pressure was applied. Artificial respiration had to be resorted to at birth. Twelve hours later there were convulsions, though there was no definite information as to whether these were general or localized. There was no vomiting.

On admission the child was healthy looking and quite conscious. The pulse was slow, regular, and forcible. The pupils were equal, normal in size, and reacted to light. The whole area of the left parietal bone was considerably depressed below the general surface of the skull.

The following operation was immediately performed, A.C.E. mixture being employed as the anaesthetic. A piece of bone the size of a sixpenny piece was trephined from the centre of the left parietal bone, and about 2 drachms of dark fluid blood escaped. The dura mater was found not to be lacerated. The bone was readily elevated and restored to its normal shape. The brain resumed its natural convexity. The child was in the theatre about half an hour.

On returning to the ward there was a convulsion limited to the right side of the body, and another on the following day. With this exception recovery was uneventful. The sutures were removed on the eighth day, and on the ninth day the child returned home and resumed breast feeding.

At the present date, seven weeks after operation, I learn that the child is thriving, and both the local and general conditions are quite satisfactory.

# Reports of Societies.

## ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNAECOLOGICAL SECTION.

*Thursday, January 13th, 1910.*

H. MACNAUGHTON-JONES, M.D., President, in the Chair.

### *Operation for Prolapsus Uteri.*

**DR. J. INGLIS PARSONS reported a case of prolapsus uteri with severe cardiac disease operated on under local and spinal analgesia.**

The patient, aged 39, had had three children, the youngest being 5 years old. Menstruation had been regular but rather excessive. She had suffered for some years from a profuse leucorrhoea, and complained of bearing-down pains and falling of the uterus. This had been treated with pessaries without relief. On admission to the Chelsea Hospital for Women the patient was found to have a systolic mitral murmur and systolic and diastolic aortic murmur. The pulse was a little irregular and had the typical water-hammer character of aortic regurgitation. The general condition, however, was good. On vaginal examination the cervix was found to be enlarged and to present an erosion, the perineum was torn through to the sphincter ani, and there was prolapse of both vaginal walls. It was determined to attempt injection of the broad ligaments with quinine solution for the prolapse under local analgesia. After treatment in bed for ten days the right broad ligament was injected first with 80 minims of quinine solution after 1 drachm of saline solution, containing one-sixth of a grain of eucaine B., had been injected into each broad ligament. The first injection of the quinine caused a good deal of pain and the patient became distinctly faint, the pulse being hardly perceptible. The hypodermic administration of strychnine caused rapid improvement, and the second injection into the left broad ligament was then carried out. This caused almost as much pain and faintness as the first injection, but the patient recovered from it more quickly. Three weeks after the operation she left the hospital, wearing a metal pessary. Although Dr. Inglis Parsons did not expect a very good result owing to the dilution of the quinine solution by the eucaine, yet when the patient came up to the hospital at the end of five months the uterus was in good position and well held up, and she was able to do without the pessary. As the ruptured perineum still caused a good deal of trouble, she was readmitted for operation. In view of the condition of her heart, Dr. Inglis Parsons recommended that the operation should be performed under spinal anaesthesia; 1 c.cm. of a 5 per cent. solution of tropacocaine, therefore, was injected into the spinal theca between the third and fourth lumbar vertebrae by the house-surgeon, Mr. T. C. Clare. After waiting five minutes, the patient was placed in the lithotomy position, and anaesthesia was found to be satisfactory. Throughout the operation the pulse maintained its ordinary rate, and there was no evidence of any cardiac distress. Two hours afterwards she felt faint, and actually fainted shortly afterwards; this was, no doubt, due to the head of the bed having been raised 8 in. for the purpose of limiting the upward diffusion of the tropacocaine solution.

**This case, in the author's opinion, is of interest as showing that the method may be employed for operation on the pelvis, even where severe valvular lesions of the heart exist.**

### *Pelvic Haematoma of Ovarian Origin.*

**DR. CUTHBERT LOCKYER read a paper on this subject. He said Mr. Stanley Boyd had given him the details of two cases operated upon by him for supposed acute appendicitis, but which proved to be cases of pelvic haematocele in which there was no evidence of pregnancy. In both instances the Fallopian tubes were intact and not damaged; in both an ovarian blood cyst had ruptured, and was the cause of the internal bleeding. To these two cases of ovarian haemorrhage not due to gestation Dr. Lockyer added a third, by the kind permission of Dr. Amand Routh, in which, after the left tube had been removed for ruptured ectopic gestation, a pelvic haematocele formed on the right side, due to ovarian bleeding. In this case, and in one of Mr. Boyd's two cases, the author had sought by microscopic investigation to find proof of ovarian gestation, but no evidence thereof had been obtained.**

CASE I.—A healthy young woman was taken ill with diarrhoea and abdominal pain. She was seen by Dr. Bone of Luton. The pulse-rate was 100 and the temperature 99.5°. The next day, in the evening, the pain was worse, the pulse-rate had increased to 120, and the temperature was 100°. The following day there was some general tenderness and distension of the abdomen. Nothing could be felt per rectum. When seen by Mr. Boyd the diagnosis of appendicitis was made. After making an incision outside the right rectus muscle, which revealed the presence of merely a little clear fluid, the abdomen was opened again by a paramedian incision, and a haematocele was exposed. The left Fallopian tube was a little red and the ampullary end somewhat swollen. The orifice was patent but not large, and no blood could be squeezed from it. No trace of a fetus could be found. The left ovary was represented by a thick-walled (¼ in.) ruptured collapsed cyst, and was surrounded by clot. It and the right ovary, which was a mass of small cysts, were removed. The patient made a good recovery.

CASE II.—A single young woman was seized while at a dance with pain in the right iliac region. The pain continued, but became rather less until the following morning, when it recurred severely. She was seen by Dr. John Harold, who found her looking very ill, with a rapid, feeble pulse, and considerable tenderness over the right iliac region. In the afternoon the pulse-rate was 120 and the temperature 99°. Mr. Boyd saw her in the evening, and found her looking better, but writhing with pain. No pelvic examination was made, but a provisional diagnosis of early appendicitis was made. An incision outside the right rectus revealed a mass of clot in the position of the right ovary. Through a paramedian suprapubic incision about one pint of recent blood clot was removed. The right ovary was adherent to the pelvic wall in the normal position, and was surrounded by blood clot. On its anterior free surface there was a rent in the wall of a cyst, which had a diameter equal to that of a florin. The tube was apparently normal. The left ovary contained a cyst the size of a cob nut. This was opened, and its lining membrane removed. The patient made a good recovery. She had previously been under treatment for dysmenorrhoea. The last period ended one week before the haematocele formed. Microscopic examination of the removed ovary showed that the origin of the bleeding was a corpus luteum which had matured at the last menstrual epoch, namely, a week prior to the date of the operation. The opposite ovary contained no corpus luteum. There must have been one present which ripened and discharged an ovum within a few days of the operation. The only compact lutein tissue to be found was that seen in the blood clot of the ruptured cyst, and the unavoidable conclusion was that this torn cavity represented the recent corpus luteum. The possibility of a retrograde corpus luteum behaving in this way was referred to in a paper published by Dr. Lockyer in the *Trans. Obstet. Soc.*, London, vol. xlvii, pp. 164–165.

CASE III.—A married woman was admitted into Charing Cross Hospital and operated upon by Dr. Amand Routh as an emergency case. At the time of the operation she was collapsed as the result of repeated recent haemorrhage. The abdomen contained a large quantity of fluid blood. The left tube was ruptured in its outer half and adherent to it was a mass of blood clot. The tube and ovary were removed and the patient made a good recovery. She was again admitted sixteen months later, complaining of pain in the right groin. She had been married eleven years and had three children. She had been quite well since leaving the hospital until November, one month before her admission on this occasion. On November 18th the period started in the morning, and on the evening of the same day violent pain in the right groin set in which went on until the evening of the following day. The pain was much relieved by fomentations. The period ceased the afternoon of the day it commenced, but began again five days later. The loss was slight but offensive, and continued for six days. On examination the uterus was found to be anteverted, and there was a round, hard body the size of a cricket ball to its right in the pouch of Douglas. Five days after admission Dr. Routh opened the abdomen and found the pouch of Douglas partly filled with blood, while the right ovary was also distended with clot, and presented a large rent on its surface. The tube was intact, but its fimbriated end was closed. The case was regarded as one of ovarian gestation, and the parts removed given to Dr. Lockyer to examine. A careful examination of the ovary showed no signs of gestation. A section of the wall of the cyst showed the lutein convolutions of a mature follicle still *in situ*. There was extravasation of blood into the stroma of the ovary, into the theca interna, and into the lutein convolutions, while engorged capillaries filled with red discs could be seen in the delicate tissue which keeps the lutein convolutions together.

**Dr. Lockyer said in bringing these cases before the notice of the section his object was to ascertain if any of the Fellows had met with similar experience. Dr. A. E. GILES said that he had met with a case resembling that described by Dr. Lockyer. The patient presented symptoms pointing to a tubal gestation, and at the operation the left appendages and the right tube were normal, but there was a rent in the right ovary. The case was thought to be one of ovarian pregnancy, but a careful examination of the ovary by Dr. Lockyer showed that there were no signs of any such gestation present. Eight months later the patient was readmitted to the hospital with similar symptoms, and on this occasion the left ovary showed a rent with blood clot attached. The history of the case left its exact nature doubtful. It might have been a double ovarian pregnancy, or a repeated haematocele due to a ruptured lutein haematoma, or a lutein haematoma in the first instance, and an ovarian pregnancy in the second. The PRESIDENT thought it had been shown for some years that pelvic haematocele might occur independently of the presence of a gestation, and the differentiation of the two**

classes—that which was of gestational origin and that which arose from a corpus luteum and was associated with lutein changes—he had embodied in the last edition of his book. He had had cases which undoubtedly were not due to gestation. Dr. BLACKER thought he had met with a case of this kind. The patient, a young girl, aged 19, a virgin, was admitted into University College Hospital with a history of acute abdominal pain. The pain had commenced suddenly two days before the period was due, and was followed by the formation of an abdominal tumour, which gradually increased in size. The periods had been regular, and the last period occurred at the proper date, and was normal in amount. Dr. Herbert Spencer opened the abdomen and found a large haematocele, which was removed, and the cavity drained. The patient made a good recovery. There was nothing to suggest pregnancy, and there seemed no reason to doubt that this was a case probably of haemorrhage from a ruptured Graafian follicle in the ovary.

*Proportion of Malignant to Innocent Ovarian Growths.*

Mrs. SCHARLIEB read a paper on this subject based on a consecutive series of 150 cases. Of the 125 innocent growths there had been paucilocular 48, multilocular 42, adenomata 10, papillomata 2, dermoid 16, corpus luteum 2, lutein cysts 1, fibroma 3, fibromyoma 1. Of the 25 malignant cases there were papilliferous cysto carcinomata 13, adeno-carcinomata 7, sarcomata 4, and uncertain 1. In this series of 150 cases no growth was included smaller than a hen's egg, and very few smaller than a lemon. The proportion of malignant to innocent cases worked out as one-sixth; the average age of the malignant cases was a little over 46 years, and of the innocent cases about 35 years. The immediate mortality of the malignant cases was 20 per cent., whereas only 2 died of the 125 non-malignant cases; of these deaths one was due to the slipping of a ligature, and the other to a large suppurating cyst universally adherent and not removable. It was found that of 25 cases 5 were probably secondary, 2 to cancer of the stomach, 2 to scirrhus of the mamma, and 1 to sarcoma of the uterus. Mrs. Scharlieb laid stress upon the fact that, considering the impossibility of making a correct naked eye diagnosis as to the nature of the growth, it was important that all should be submitted to microscope investigation by a competent pathologist; she also emphasized the necessity for removing ovarian growths intact in all cases where it was surgically possible; she advanced a plea for better equipment and remuneration of pathological research, and pointed out the difficulties of the present chaotic systems of classification. Dr. AMAND ROUTH agreed with Mrs. Scharlieb as to the difficulty of classifying papillomata of the ovary, especially with regard to their malignancy. He believed that almost all varieties of papillomata developing on the inner surface of an ovarian cyst were likely to take on a malignant character. Mr. B. GLENDINING offered some figures on the relative malignancy of ovarian tumours taken from the pathological records of the Chelsea Hospital for Women for the years 1908 and 1909. Among 106 cases of ovarian tumours (follicular, lutein, and tubo-ovarian cysts being excluded), the relative malignancy was 17 per cent. (11.3 primary carcinoma and 5.7 secondary carcinoma). The primary malignant cases were composed of columnar-celled carcinoma 5.7 per cent, endothelioma 1.8 per cent., and sarcoma 3.8 per cent. From an examination of the cancer register of the Middlesex Hospital he had found that the incidence of secondary carcinoma of the ovary for all cases of carcinoma in a series of 690 *post-mortem* examinations was 5 per cent. These secondary carcinomata could readily be divided into two groups—namely, those arising as the result of direct extension from neighbouring viscera, and those the result of dissemination from a distance via the peritoneal cavity. A striking fact was the frequency with which secondary carcinoma was engrafted upon a pre-existing cystadenoma. He had met with four cases of this kind during the past year. Dr. W. S. A. GRIFFITH asked Mrs. Scharlieb if the diagnosis in her twenty-five cases was from pathological, as well as from clinical, characters. If not, he doubted if there were not some cases included which were not malignant. The PRESIDENT said he had gone through the records of 100 cases of removal of the ovaries for various growths and degenerations. Of this number there were five carcinomata, three of these being adeno-carcinomata, one sarcoma, one malignant papillary dermoid, and one papillary carcinoma. All the remainder were benign, including two fibroma, and two adeno-fibroma. He obtained a series of statistics from the foreign clinics of a few personal friends. Analysing the total of 2,893 cases, the records of 1,045 showed that 659 were unilateral, 386 bilateral. Of the entire number 309 were indisputably malignant. Of the latter growths 189 were epitheliomatous degenerating cysts, and 18 were not differentiated, 32 adeno-carcinomatous cysts, 28 proliferating papillomata, 22 sarcoma, 18 various types of carcinoma as glandular and papillary adenoma, and cystadenoma, solid malignant adenoma, malignant dermoid adenoma, and 1 endothelioma. Of the 41 cases of which there was a record of the unilateral or bilateral occurrence, 26 were unilateral and 15 bilateral. With regard to primary or secondary growths it was often extremely difficult to say whether a growth was primary or not, so frequently were the adjacent viscera involved. At present a great deal of confusion existed as to the differentiation of benign and malignant tumours of the ovary. He noticed that there was no case of malignancy from a dermoid tumour in Mrs. Scharlieb's list. One clinical feature which had struck him in these cases was the almost entire absence of pain.

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## MEDICAL SECTION.

*Tuesday, January 25th, 1910.*

Dr. J. MITCHELL BRUCE, President, in the Chair.

*Treatment of Tetanus by the Intraspinal Injection of a Solution of Magnesium Sulphate.*

DR. LLEWELLYN PHILLIPS communicated a paper on this subject. The case mortality of tetanus, even with the use of antitoxin, was, he held, still very high. The figures over a number of recent years, gleaned from *St. Bartholomew's Hospital Reports*, gave a mortality of 56 per cent. The reports of the cases at the Government Hospital at Cairo showed a still higher mortality—namely, 75.8 per cent. The main indications of treatment were to prevent further poisoning, to neutralize the poison already present, to nourish and conserve the strength of the patient, and to relieve symptoms. Antitoxin had proved somewhat disappointing as a curative measure, though as a prophylactic it was of great value. For the relief of symptoms, and so for the prevention of exhaustion, magnesium sulphate had been used in a 25 per cent. solution as an intraspinal injection. It had previously been shown that it was a spinal anaesthetic. Experiments made by Meltzer showed, further, that monkeys injected with tetanus toxin could be kept alive longer if they received injections of magnesium sulphate intraspinally. Twenty-one cases had been published, chiefly in America, with a mortality of 42.8 per cent.—a very substantial improvement on former figures. To this the author added 7 cases under his own treatment, of which 4 recovered, the same percentage mortality being observed. This substantial addition brought the number of cases up to 28, with 16 recoveries. Mr. PAGE described a case of tetanus admitted to St. Thomas's Hospital a few days previously, under the care of Mr. H. B. Robinson, in which 5 c.cm. of a 25 per cent. solution of magnesium sulphate was injected. Flaccid paralysis of both legs ensued, and respiratory failure occurred later, but passed off under artificial respiration; a few hours afterwards flaccid paralysis of the arms occurred, with respiratory and cardiac failure, and eventually a fatal termination. It seemed as if death must be attributable to the injection, the case not being an acute or severe one. Dr. A. E. RUSSELL said that there was no doubt spinal anaesthesia could control the spasms of tetanus or of strychnine poisoning. If magnesium sulphate produced a longer anaesthesia it might be a better agent to employ than other spinal analgesics. Mr. CASSIDY thought the rational method of treating tetanus was to get the antitoxin into contact with the central nervous system. He described another St. Thomas's Hospital case, a child under the care of Dr. Hector Mackenzie, that recovered after injection of antitetanic serum within the spinal theca. Mr. A. E. BARKER would have liked some explanation of the mechanism of the action of the sulphate of magnesium solution in tetanus. Its specific gravity being

so high it was difficult to understand its travelling up to the medulla. Dr. BEDDOES thought the apparently greater mortality of tetanus in Cairo, as compared with London, depended on the cases coming under treatment earlier in this country. It was really a less fatal disease in the tropics, which he attributed in part to the higher atmospheric temperature.

## WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

*Friday, January 7th, 1910.*

Dr. NEVILLE T. WOOD, President, in the Chair.

CLINICAL MEETING.

BEFORE the work of the meeting commenced the following resolution was passed, on the motion of the PRESIDENT:

> The West London Medico-Chirurgical Society takes this opportunity of expressing a deep sense of obligation to its distinguished founder, Mr. Charles Bell Keetley, and hereby records a vote of sincere condolence with his nearest relatives.

The following were among the exhibits:—Dr. SEYMOUR TAYLOR: A case of *Tabes dorsalis* in a man aged 61 with history of an untreated hard sore of twelve or fourteen years ago. He showed signs of early general paralysis. In addition, tertiary and quartan manifestations seemed to coexist in a mass in the right tibialis anticus, and degenerative changes in the central nervous system. Dr. J. A. COUTTS: A case of *Juvenile rheumatoid arthritis* in a child 6½ years old. All the large joints of both hands and feet were involved, as well as the first interphalangeal joints. There was persistent pyrexia. The disease had lasted two years. Dr. E. A. SAUNDERS: A case of *Diabetes* in a girl aged 14. He first saw her in January, 1907, for polyuria and thirst. Under a strict diet in the wards the urine became sugar free and thirst and polyuria disappeared. Since her discharge sugar had been present from time to time though she had been kept on a fairly strict diet, having only the carbohydrate present in gluten bread and in the lactose of milk. The case had, so far, run an unusually benign course in a child. Dr. SEYMOUR TAYLOR remarked on the advisability in cases of diabetes of giving a little starchy food. Dr. FREDERICK PALMER asked Dr. Saunders whether in the case of children he advised a strict diet or allowed a small quantity of starchy food; the latter he considered better in the case of older subjects. Dr. RICE OXLEY advised allowing a little elasticity in diet, anyhow to older patients, as otherwise they would take liberties themselves. Dr. F. PALMER showed (1) A case of *Recurrent carcinoma* affecting the cerebro-spinal system in a woman, aged 42, whose right breast had been removed four and a half years ago. The present condition began eight or nine months ago with ptosis of the right eyelid. There was present now some local recurrence, and besides the ptosis there was affection of some of the ocular muscles, and of the plantar and knee reflexes. (2) A case of *Tabes dorsalis* in a man aged 41 years, the condition being well marked. His wife had been delivered of twins only four months previously, which seemed to connote unusual retention of reproductive power. Dr. P. ABRAHAM: A case of *Mycosis fungoides*. The lesions, desquamating eruption and some ulcers and scars of old ulcers, were very much like syphilitic lesions. The man gave a history of having had that disorder some years ago.

## MEDICAL SOCIETY OF LONDON.

A CLINICAL meeting was held on Monday, January 24th, Dr. SAMUEL WEST, President, in the chair. Dr. F. PARKES WEBER showed a case of *Chronic leukaemia* without anaemia, and in the discussion on this case Dr. ROBERT HUTCHISON discussed the possibility of its being an instance of slowly growing lympho-sarcoma in which white cells occurred indistinguishable from lymphocytes. Dr. WEBER also showed a female patient, aged 36 years, suffering from *Functional abdominal disease*, accompanied formerly by vomiting of faeces and enemata. Sir JOHN BROADBENT, Dr. WILFRED HARRIS, and Mr. WILLMOTT EVANS showed cases of *Syringomyelia*, and the question was discussed as to whether *x*-ray treatment of this condition was of any use. In some cases it seemed to increase the sufferings of the patient, and there did not seem much to be said in favour of the treatment. Dr. F. J. POYNTON showed a case of *Cretinism and psoriasis*, and Mr. T. H. OPENSHAW a case of *Paralysis of the spinal accessory nerve after removal of the cervical glands*. The whole of the trapezii muscles and the left sterno-mastoid were atrophic, the sterno-mastoid on the right side of the neck acting feebly. Mr. Openshaw emphasized the importance of suturing the spinal accessory nerve in such operations in cases where it was divided; and Dr. WILFRED HARRIS pointed out how extraordinary it was that such little disability resulted in these cases, the patients being able to do almost anything except carry weights on their shoulders. Mr. DREW commented on the importance of defining the spinal accessory nerve when removing glands. Mr. WARREN LOW showed a case of removal of a *Carcinoma of the pelvic colon* eighteen months after operation; an end-to-end anastomosis of the bowel was performed, and the wound healed well. The patient was in good health and had increased in weight. The specimen of carcinoma was examined by Dr. B. H. Spilsbury, who reported that microscopically the growth was adeno-carcinoma. Dr. GUTHRIE and Mr. EDMUNDS showed a girl, aged 6 years, with *Paresis of the left cervical sympathetic*, retarded growth of left upper and lower extremities, wasting and paresis of the intrinsic muscles of the left hand associated with caries of the cervico-dorsal spine. Dr. W. HILL, by means of a new improved *direct-vision laryngoscope*, demonstrated a case of benign laryngeal growth.

## NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

THE annual meeting was held at Manchester on January 21st, 1910, Dr. J. W. MARTIN (Sheffield) in the chair. *Election of Officers:* Dr. W. K. Walls (Manchester) was elected President, and Dr. W. Fingland (Liverpool) Treasurer for the year 1910. Mr. R. FAVELL (Sheffield) showed a large *Solid ovarian tumour* which he had recently removed from a girl of 15 who had never menstruated. There was a little ascites. Microscopically the growth was a papillary adeno-carcinoma. Dr. DONALD and Dr. GRIMSDALE doubted if the tumour, in spite of its microscopical appearances, would prove to be malignant. They had removed precisely similar growths from girls of 7 and 18 years respectively, several years ago, and in neither case had there been a recurrence. Dr. W. E. FOTHERGILL (Manchester) showed an example of *Ruptured cornual pregnancy*, consisting of a fetus 4 in. long and a thick-walled ruptured cornual gestation sac, the size and shape of a large hen's egg. The patient had borne four children in the left cornu of the uterus, and then pregnancy in the right cornu led to its rupture, which demanded an emergency operation. The cornu was excised by a V-shaped incision, the ovary and tube being left. The patient was now again four months pregnant. Dr. Fothergill also showed the corpus of a much *Hypertrophied uterus*, removed from a woman of 43, who had not been pregnant for six years. Haemorrhage of a month's duration had caused profound anaemia. The uterine wall was 1½ in. thick. The hyperplasia was shared in due proportion by the endometrium and the muscle, whose blood vessels were not more thickened than is usual in women of the patient's age. The glands, stroma, and vessels of the endometrium were normal. Dr. Fothergill protested against the use of the name "chronic metritis" in cases of this kind, which were commonly found in patients who had no history, no symptoms, no physical signs, and no pathological change indicating the existence, at any time, of any infective or inflammatory process. Dr. GRIMSDALE (Liverpool) recounted his experiences with a case of *Uretero-vesico-vaginal fistula*, in order to indicate the advantages of the finest silk over catgut as a suture material in such cases. The patient was a virgin aged 24 years. Another surgeon had removed a ureteral calculus by the vaginal route, the fistula resulting. Several plastic operations, in which catgut was used, failed, leakage occurring on or after the fifth day. On one occasion fine Japanese silk, No. 0000, was used, and the fistula was reduced to a pinhole. An attempt to close this with catgut failed, and a large fistula resulted. Several

unsuccessful operations with catgut followed. Finally, the silk was again used, and with complete success. Dr. Grimsdale expressed the belief that coarse catgut tore the sodden delicate structures, whilst fine catgut was absorbed too quickly. Dr. A. W. W. LEE and Dr. A. J. WALLACE pointed out the advantage of using Schuchardt's para-vaginal incision to facilitate getting at such a fistula when the vagina was very small. Dr. LLOYD ROBERTS (Manchester) reported a case in which a woman aged 39, suffering from metrorrhagia, had noticed gradual enlargement of the abdomen for twelve months. Two months before operation an attack of severe left-sided abdominal pain occurred. A very tender cystic swelling was felt on the left side of the large fibroid tumour. Torsion of the pedicle of a fibro-cystic uterine tumour was suspected. On opening the abdomen an *Ovarian cyst*, with twisted pedicle, was found. The fibroid uterus was also removed. Dr. W. FLETCHER SHAW (Manchester) showed a *Uterine fibroid which had undergone red degeneration*. It had been removed by Dr. W. K. Walls from a nullipara, aged 39. The tumour was a rapidly-growing one, and there had been malaise, raised temperature, and quickened pulse for two days. Progress was favourable until the ninth day, when the temperature rose to 102°, and two days later it reached 105° and was accompanied by a rigor. Acute ulcerative endocarditis was diagnosed by a physician and anti-rheumatic serum was used, though no culture could be obtained from the blood. She eventually made an excellent recovery. Microscopically the tumour showed an enormous number of small thin-walled blood vessels, many of which were thrombosed, the others being engorged with blood. No micro-organisms were found by microscopical examination. Cultures could not be made, owing to the presence of preservative fluid. Dr. BLAIR BELL (Liverpool) showed a *Bicornute uterus* with a cystic ovary on one side and a fibroma of the ovary with a large cyst of the hilum on the other. Dr. A. STOOKES (Liverpool) showed some specimens of *Fetal deformities*, including one of cervical spina bifida, which had presented by the brow, and one of cyllosomus, with which had been associated hydrorrhoea for two and a half months and a partial placenta praevia.

# Reviews.

## MÜNSTERBERG'S PSYCHOTHERAPY.

A VOLUME of *Psychotherapy* by Professor MÜNSTERBERG[1] belongs to a series of books which he is writing on the practical applications of modern psychology. The first book, published in 1908, called *On the Witness Stand*, was a study of the relations of scientific psychology to crime and the law courts. This new book deals with the relations of psychology to medicine. It is, however, not addressed merely to medical men and has two aims—one to counteract the misunderstandings and vague mysticism which overflood the whole field of psychotherapy in its various forms, and the other "to strengthen the public feeling that the time has come when every physician should systematically study psychology, the normal in the college years and the abnormal in the medical school." Unless this is done now, Professor Münsterberg foresees a most deplorable disorganization, the symptoms of which no one ought to overlook to-day.

The keynote of the book, in so far as it aims at correcting popular misunderstandings and the dubious "spiritual healing" movements in America and elsewhere, is struck in the first chapter, on the aims of psychology, where the author dissevers moral from mental influences. Moral influences are for Professor Münsterberg those which have an ethical and ideal value, and bear upon man as a purposive *subject* or personality; whereas mental influences are those which affect him in his relations as an *objective* causal chain of events, that is, of contents of consciousness. According to Professor Münsterberg, the former moral view may be religious, or ethical, but is not psychological. Hence, though the co-operation of the clergyman may be valuable as strengthening purposive ideals, his posing as a healer by mental influences—as, for instance, in the Emmanuel Church—is nothing else than an unwarrantable intrusion, due to his confusion of the mental and the moral spheres of action.

Recognizing that much of the overlapping of religion and psychotherapy is due to a failure to get down to fundamental facts, Professor Münsterberg proceeds to clear the ground in the third chapter by an examination of the connexion of mind and brain. This chapter is in the main an exposition of his views according to the hypothesis of psychophysical parallelism, to which theory Professor Münsterberg adheres. This theory is, of course, essentially a deterministic theory. Professor Münsterberg, however, is a libertarian—outside psychology. His reconciliation of these two opposite views is ingenious. He says: "As long as we move in this sphere of purposive interest, we are free and deal with free selves; but if in the midst of these free aims the will arises to consider the actions of others and of ourselves from the standpoint of causality, then we have ourselves decided to enter a new sphere in which it would be meaningless to seek for any will which is not determined by causes." That is, it is entirely a matter of the point of view: from the ethico-religious or purposive standpoint man is free; from the psychological standpoint he is determined. A little later, however, he modifies this latter statement and concedes the psychologist's right to speak of freedom—which, he says, does not mean exemption from causality—and regards the morbidly conditioned as unfree, and the action of a normal subject, where "the motor response results from the undisturbed co-operation of normal brain parts," as pyschologically free. Difficult as it may be to regard, with Professor Münsterberg, any action as at once free and determined, such views have practical advantages at the present time when psychological, ethical, legal, and religious issues are continually confused. It has been necessary to lay stress on Professor Münsterberg's view of the relations of brain and mind, because it explains his subsequent elucidation of practical therapy. For Professor Münsterberg, in harmony with the foregoing, mental disease is a disease of the organism, "the mind reflects only symptoms of the disease." There are no functional diseases, for "every mental disturbance corresponds to a disorder in the brain's functions," and "there cannot be a change in the functions of the brain without a change in its structure." This leads—omitting any reference to a valuable chapter on suggestion and hypnotism—to the doctrine of the subconscious. Here Professor Münsterberg is refreshingly clear: "The story of the subconscious mind can be told in three words—there is none." The whole question of the subconscious, of course, turns on the nature of memory. For Professor Münsterberg, memories are physical traces which become mental only when they are reflected in consciousness, after which, and before which, they are purely physical facts, "dispositions of brain cells." "To have psychical existence at all means to be object of awareness for a consciousness. Something psychical which simply exists but is not object of consciousness is therefore an inner contradiction. Consciousness is the presupposition for the existence of the psychical objects. Psychical objects which enjoy their existence below consciousness are thus as impossible as a wooden piece of iron," or, as Professor Ziehen said (*Das Gedächtnis*, 1908; Berlin: August Hirschwald) in following a similar line of argument about this same doctrine, "ein hölzernes Eisen." How Professor Münsterberg squares this conception with the phenomena of hypnotism, somnambulism, day dreaming, and particularly with the results of work done in laying bare subconscious complexes by Jung, Bleuler, Peterson, and others who have followed Professor Freud in his psycho-analytic methods—of which, by the way, he gives an admirable account—we must leave to the reader. The chapters on general methods, special methods, mental symptoms, and bodily symptoms occupy a large part of the book, and are admirable both in form and expression, in what they contain, and, having regard to the wide public addressed, in what they leave out. Three chapters on the place of psychotherapy—that is, in relation to the church, to the physician, and to the community—each of them a separate and most informing essay, bring to a close an excellent book. Whilst there may be some who on philosophical

[1] *Psychotherapy*. By Hugo Münsterberg, M.D., Ph.D., Litt.D., LL.D., Professor of Psychology, Harvard University. London and Leipzig: T. Fisher Unwin. 1909. (Demy 8vo, pp. 413. 8s. 6d.)

grounds will have a large and hearty quarrel with this eminent writer and teacher, there can be no doubt that the publication of this book to-day is most opportune, and that it should be widely read.

## STOMACH AND INTESTINES.

IN the preface to his textbook on diseases of the stomach,[2] Dr. ELSNER apologizes for publishing a new volume on the subject, and offers as an excuse that the others are either very large or very small, and that his is intended to occupy a midway position. Without discussing how far a book of 500 pages justifies this intention, we may consider it upon its merits. Dr. Elsner, a former assistant to Professor Boas, has had a large experience of stomach diseases, and is able to give a fair and clear account of the views now held about them, and of the current methods of examination and treatment. The author holds that during the last ten years three important advances have been made in the diagnosis of stomach disease, and he places first the use of the Roentgen rays; secondly, the search for latent blood in the stools; and thirdly, the recognition of the asthenic constitution, or the "habitus gastroptoticus," which in Germany is believed to play such an important part in determining ptosis of the abdominal viscera with its associated functional derangements. He shares the opinion which allows a great deal of weight to the history in the diagnosis of stomach disease. Every physician recognizes the importance and the interest of histories, but they are often misleading, and where the acceptance of a particular diagnosis may mean the performance of an operation wherein the patient risks his life, we ought to feel our feet upon more solid ground, unless we are prepared to regard exploratory incision as a necessary part of stomach diagnosis. He says that pain coming on three hours after food, but relieved by eating, is nearly always attributable to hyperacidity, but we have been told here on high authority that these symptoms are always attributable to duodenal ulcer, yet both parties rely upon the history! Ulcer of the stomach, he says, may be diagnosed by cramp-like pains coming on sooner or later after meals and bearing a definite relation to the taking of food, especially if these symptoms are associated with a high degree of acidity (over 80), but he does not explain how it is to be distinguished from hyperacidity, in fact he leaves the readers under the impression that he believes hyperacidity to be usually due to the presence of an ulcer. The only means of distinguishing between a gastric and a duodenal ulcer is held by him to be the seat of the pain as indicated by the patient. In discussing the causes and treatment of gastric ulcer Dr. Elsner says nothing about the experiments of his colleague Dr. Katzenstein of Berlin with "antipepsin," of which we should have been glad to hear more. Due importance is given to the examination of the stools for latent blood, and the benzidin and hydrogen peroxide test is praised, but the benzidin solution is said not to keep more than three days. We have found a saturated solution of benzidin in absolute alcohol to keep good for several weeks, but we note the "benzidin paper" recommended by Einhorn as worth trying; it is a necessary precaution in this test that the patient should have been on a diet free from meat for the preceding three days. The author, like many of his countrymen, is disposed to attach no importance to the state of the tongue as an indication of stomach disease, and believes that a coated tongue merely implies defective mastication, especially from want of teeth. In the diagnosis of pyloric obstruction he recommends Boas's supper, but although all may agree that if the remains of food are found in the stomach next morning pyloric obstruction exists, yet their absence is not inconsistent with a degree of obstruction sufficient to cause the symptoms of which the patient complains, and which can only be removed by surgical interference, and it is, therefore, necessary to examine at a shorter interval. On the need for surgical interference in pyloric stenosis he is hesitating, and instead of recognizing that its existence is a cardinal indication, and that drugs, diet, and stomach tubes are futile, he says an operation may be performed after the failure of other means, if the patient continues to lose weight and so forth. The comparative infrequency with which recourse is had to surgery in Germany in stomach disease perhaps tends to impair the accuracy of diagnosis, for if German physicians had more often to decide whether an operation had to be performed, they would presumably be less content with their methods. For determining the size of the stomach, Dr. Elsner uses distension with carbonic acid gas in preference to air, and makes the judicious suggestion to regulate the dose by circumstances; he generally uses a teaspoonful of alkali and rather less acid. As the presence of lactic acid has been said by Boas to be diagnostic of cancer of the stomach, it is right to remember that lactic acid fermentation takes more than an hour, and cannot occur in the time allowed for an ordinary Ewald test breakfast. As bread contains lactic acid, it is better to use oatmeal gruel made with water, and the stomach should be examined at the end of three or four hours. It is only of importance when abundant, but where stasis is marked and lactic acid present the case is probably one of cancer. Boas's long bacilli, also said to indicate cancer, are only met with where hydrochloric acid is absent, which may account for the general failure to confirm the opinion of Boas as to their diagnostic value. The book is a good students' manual, but does not impress us as possessing any special individuality.

Dr. BYRON ROBINSON'S account of the *Arteries of the Gastro-intestinal Tract with Inosculation Circle*[3] contains much repetition, both of words and figures, and not very much new information. He offers his readers not so much new lamps for old as new terms for old knowledge. Most people prefer to tell a straightforward tale by means of well-known and well-understood terms, but Dr. B. Robinson likes new terms. When he wishes to mention the superior mesenteric artery he does not use the old term; nor does he speak of the arteria mesenterica superior, but of the proximal mesenteric artery; and he adds to the confusion by occasionally calling parts of the trunk by different names, the upper part being the jejunal artery and the lower the ileal. He certainly does good service by insisting upon the importance, length, and number of the straight terminal vessels which spring from the enteric arterial arcades, and the reader who will struggle through the tedious repetition and wrestle vigorously with the terminology will eventually gather a good knowledge of the arterial supply of the abdominal part of the alimentary tract, and he will have engraved in his memory the author's dictum that "the function of the inosculation circle is to congest its peripheral viscus, and to transport blood volume from one viscus to another."

The second edition of Dr. FROUSSARD'S book on the treatment of constipation, which is one of the series known as *Les Actualités médicales*, appears after an interval of six years.[4] The author adheres to the somewhat artificial classification adopted in the first edition, by which constipation is divided into spasmodic and atonic, although both occur in the course of the same case, and spasm is frequently the result of the abuse of purgatives taken to relieve atonic constipation. The definition of the condition which Dr. Froussard calls "quantitative constipation" is incomplete. It is defined as a condition "in which the bowels are moved daily, even several times a day," yet the colon is not emptied. Is not this the normal condition? It is, for instance, the rule to find faeces in the colons of healthy persons who die suddenly. The methods of treatment recommended are those generally recognized, including diet, exercise, massage, douching, enemata, irrigation, and drugs; but we note with surprise that no reference is made to lacticized sour milk, as recommended by Professor Metchnikoff, which is the most useful recent suggestion for the cure and prevention of habitual constipation.

Mr. PATERSON has reprinted, in a small volume entitled *Jejunal and Gastrojejunal Ulcer following Gastro-*

[2] *Lehrbuch der Magenkrankheiten.* Von Dr. Hans Elsner. Berlin: S. Karger. 1909.

[3] *The Arteries of the Gastro-intestinal Tract with Inosculation Circle.* By B. Robinson, M.D. Chicago: Published by Chicago Medical Book Company. (Cr. 4to, 222 pp., 88 figures.)

[4] *Le Traitement de la constipation.* Par Dr. Froussard. Second edition. *Les Actualités médicales.* Paris: J. B. Baillière et fils. 909 (Cr. 8vo, pp. 100. Fr. 1.50.)

*jejunostomy*,[5] a paper read before the Royal Society of Medicine. The main point of his paper is to show that when ulceration of the jejunum or gastrojejunal junction occurs after gastrojejunostomy it may be due either to infection or to the toxic action of hydrochloric acid on the mucosa. Up to the present no such ulcer has followed the posterior no-loop operation, so it may be assumed provisionally that it is less likely with this method than with anterior gastrojejunostomy. Prevention must be based on careful technique and in prolonged after-treatment directed to the avoidance of hyperacidity of the gastric juice. There is a good bibliography.

## A TEXTBOOK OF PATHOLOGY.

THE second volume of Professor ADAMI'S *Principles of Pathology* is written in conjunction with Dr. ALBERT G. NICHOLLS, and is devoted to what the authors term *Systemic Pathology*.[6] Being the sequel to vol. i, reviewed last May (vol. i, 1909, p. 1124), which dealt with "general pathology," the present volume discusses what is usually termed "special" pathology. In two respects it contains more than is usually published in books bearing this latter title: it includes the pathology of the blood and organs of circulation, and it makes a special point of dealing with disturbances of function, as well as those of structure. The authors describe as erroneous the more usual opinion that the pathology of the blood should come under the heading of "general." Upon this matter we are not disposed to quarrel with them; provided that the morbid conditions of the blood receive their due recognition, the academical question as to the particular kind of pathology to which these conditions belong appears too unimportant to call for serious dispute. They raise a more difficult problem in claiming that discussions of function should occupy an important place in a textbook of systemic pathology. It is, indeed, true that advanced teaching in medicine is becoming more and more based upon what they term "functional pathology," and this is a healthy sign that medicine is broadening its scientific foundations. The physician is becoming more and more of a pathologist; and pathology, thanks to such men as Professor Adami, is broadening its grasp of clinical problems. But, admitting that the science of disease is of vital concern to the practitioner as well as to the pathologist, the ever-increasing complexity of the subject has made a subdivision of labour obviously necessary. We must, moreover, remember that disease, being a deviation from the normal, requires for its interpretation a knowledge of physiology, and not merely an elementary knowledge, but a knowledge of its most intricate problems, because this boundary zone between the normal and the abnormal, which is so important to the science of medicine, is precisely the region where the modern physiologist is engaged upon his most difficult tasks. Hence the necessity for a further specialization of the work, since the interpretation of disease, as a disturbance of function, must be dependent on the results of the physiologist. But together with subdivision there must be co-ordination, and, however complicated each branch of the subject may become, it will always be necessary to bring together into one focus the data derived respectively from the physiologist, the pathologist, and the clinician. It is conspicuously to the credit of Professor Adami and Dr. Nicholls that they have attempted this extremely difficult task of co-ordination. Their enterprise will certainly be appreciated by advanced students, though perhaps the average man who is preparing for life as a general practitioner will sometimes find himself carried out of his depth.

The book is divided into ten sections, each of which is devoted to a special "system." As some of these have required treatment at considerable length, the volume has assumed the inconveniently large bulk of 1082 pages. The book is difficult to criticize because it occupies an intermediate position between an ordinary textbook on special pathology and a series of monographs on diseases of particular organs. Judged by the former criterion, it is too bulky; judged by the latter, it needs considerable expansion. Owing to the excellence of its contents we say without hesitation that expansion into several volumes, after the analogy of *Quain's Anatomy*, would be the better remedy of the two. Section I, on the cardio-vascular system, which already runs to 236 pages, might easily and with much advantage be converted into an independent volume. It puts together the main facts about the pathology of the blood, the blood-forming organs, and the vascular channels; and, owing to the constructive grasp with which these data are marshalled and correlated, it excels the majority of textbooks in conveying a clear picture of the part played by the cardio-vascular system in relation to disease. Sections II, III, and IV are concerned, respectively, with the respiratory, alimentary, and nervous systems. The last hardly comes up to the standard which has been set by the best books on this subject; but Sections II and III each deserve expansion into volume form; the authors would then have a fuller opportunity of developing their conceptions of "functional pathology" in relation to these two systems. Section VI, on the urinary system, needs supplementing with a good deal more chemistry before it can attain to a very high standard. Of the remaining portions of the book, special mention may be made of Section VIII, which gives a much fuller account of the pathology of skin diseases than is usually found in general textbooks.

## THE NORTH ATLANTIC.

DR. NORRIS WOLFENDEN is well known to all zoologists both as a keen yachtsman and an enthusiastic naturalist. The publication of his *Scientific and Biological Researches in the North Atlantic*[7] will be welcomed by all interested in the investigation of the marine problems. These researches, commenced in 1899, and pursued more or less continuously until 1907, were at first confined to the Faeroe-Shetland Channel. Subsequently, as this area came within the scope of operations of the International Committee, Dr. Wolfenden turned his attention to more westerly districts, and examined the deep-sea trough of the Atlantic and southwards as far as Madeira and Gibraltar. The various methods employed are fully described, and careful statistical details and tables relating both to hydrography and to the plankton are given *in extenso*. These will be of considerable value to all engaged in similar work, and reference will have to be repeatedly made to these observations. One sentence from the introduction may be quoted in the hope that it may attract more widespread notice. The author says: "I cannot but think that there are many yachtsmen who would willingly give their assistance if they were only initiated into the work, and only realized of what great importance scientific observations of this kind may be in helping to solve many problems of oceanography." Let us hope that this may meet the eye and rivet the attention of some among the many medical men who are yachtsmen.

The work of the International Committee is perhaps of too economic a character to arouse any very enthusiastic interest even among professed zoologists, but there are very many problems connected with oceanography in its widest sense which are in themselves intensely fascinating, and which are bound to arouse interest in any scientifically minded person. Some of such problems can be learnt by a glance at the published results of Professor Stanley Gardiner's oceanographical survey of the Indian Ocean.

Dr. Wolfenden has handed over the more important zoological "catches" to specialists, whose reports are included in the volume. These researches are of great value, and Dr. Wolfenden has earned the gratitude of all marine biologists and hydrographers not only for publishing his observations, but also for the labour and enthusiasm with which he has carried on the work in such a public-spirited manner.

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[5] *Jejunal and Gastrojejunal Ulcer following Gastrojejunostomy.* By Herbert J. Paterson. London: John Bale, Sons and Danielsson, Ltd. 1909. (Sup. roy. 8vo, pp. 72; illustrated. 2s. 6d.)

[6] *The Principles of Pathology.* By J. George Adami, M.A., M.D., LL.D., F.R.S., and Albert G. Nicholls, M.A., M.D., D.Sc., F.R.S.Can. Vol. II. *Systemic Pathology.* London: Henry Frowde, and Hodder and Stoughton. 1910. (Roy. 8vo, pp. 1082; 310 engravings and 1 plates. 30s.)

[7] *Scientific and Biological Researches in the North Atlantic, conducted by the Author in his yachts "The Wahirn" and "The Silver Belle."* Memoir of the Challenger Society No. 1. By R. Norris Wolfenden, B.A., M.D.Camb., F.L.S., etc. London: Rebman, Limited 1909. (Med. 4to, pp. 242. 10s. 6d.)

## A BEAUTIFUL ARM.

THE case against vaccination will not benefit creditably by the publication of the small book entitled *A Beautiful Arm*.[8] The writer boasts of his fourteen days' imprisonment for his refusal to comply with the Vaccination Acts. He claims to have made "an exhaustive study of the subject in all its bearings, especially upon its legal side, and became thoroughly equipped for the defence." Inspiration, and possibly dollars, for the writing and publication of these pages have come from a wealthy American, as the book is stated, in a prefatory note, to have been "directly instigated" by Mr. C. D. Taylor, a successful prospector in Nevada and the Rocky Mountains, whose intention it is to circulate the book widely at his own expense in the United States. If Mr. Taylor could be induced to arrange for the publication and circulation of a reply to *A Beautiful Arm* he would find himself engaged in enlightening and not misleading his fellow citizens. This would show that the successful prospector really desired to circulate the truth on this matter among those he wishes to educate. Mr. BOOTH contends that "the whole controversy and all of importance that may be regarded as of direct relation to it will be found in his pages in a condensed form 'so that he who runs may read.'" This statement is absurdly incorrect. The American readers for whom this book was specially concocted are not even informed that a Royal Commission sat in this country for seven years, or that it unanimously agreed it was the duty of the State to continue to provide vaccination for the people. Nor is any mention made of the evidence from Germany. Surely these are matters of importance in the controversy and have "a direct relation to it," but these matters are not condensed, they are suppressed. On page 88 the writer says, "Instead of less small-pox, we have it proved to a demonstration what antivaccinators have taught for nearly a century—viz., that with increased vaccination there will be increased small-pox, and this is the only logical conclusion that unbiassed and sensible people can arrive at." This statement is quite as far from the truth as the one just controverted. If it were true, then Germany would long since have been depopulated by small-pox alone. If it were true, then the staff, nurses, and attendants at small-pox hospitals "with increased vaccination," instead of being practically immune, would be the first to contract small-pox. It is, however, true that when small-pox appears the conscientious objector and the merely apathetic or negligent rush for the protection which vaccination affords, and thereby increase the vaccinations contemporaneously with the presence of small-pox, but they escape. That is not the "logical conclusion," however, to which Mr. Booth refers.

## NOTES ON BOOKS.

AN inquiry into the prevalence of any disease amongst a dying race in a distant part of the world has a medical as well as an ethnological value, and Dr. ALIS HRDLICKA has produced a very interesting report on *Tuberculosis Among Certain Indian Tribes of the United States*,[9] which establishes the fact that these peoples suffer from tuberculosis far more than the white inhabitants of the country, in spite of the fact that they do not live in over-crowded towns and are engaged in outdoor occupations. The cases of phthisis positively established by Dr. Hrdlicka in the five tribes examined amounted to the very high proportion of from 3 to 5 per cent. of the whole population. From the information available it appears that this state of affairs only dates from recent times, and may be traced to the advent of the white men. Once infection had been introduced the spread of the disease was furthered by the habits of the Indians, which tend to lower the resisting power of the individual whilst favouring direct infection. Neglect of ventilation of their houses and huts, especially during the winter, excessive clothing, and indulgence in alcohol of the worst description, seem to be the main agents in lowering resistance, whilst inadequate and improper food is a contributory agent in many cases. Direct infection is favoured by uncleanly habits and by traditional customs. Indiscriminate expectoration seems general, and the earth floors of the huts must be thoroughly infected; clothing and bedding, which may easily get soiled with sputum, are never changed; wooden bowls and spoons are used for food, and are passed from one to another during a meal; the pipe is passed round and smoked by all. As consumptives are numerous and no precautions are taken, the opportunities for infection are many. Dr. Hrdlicka sketches the requirements for prophylaxis, but these depend upon an alteration in the habits of the Indians, which may not be brought about in time to save the tribes from extinction.

The sixth volume of the *Transactions of the Medico-Legal Society*[10] is edited by Mr. DIGBY COTES-PREEDY and Dr. W. A. BREND, both members of the Inner Temple, and covers the work of the society during the session ending in July, 1909. Some fourteen papers and discussions are recorded, of which the majority, including the Plea for Correct Thinking, put in by the late president of the society, Mr. Justice Walton, by way of an inaugural address, have already received notice in these columns. Among other papers are considerations of hereditary resemblances in relation to legal affiliation, of the law of exhumation and of haemothymia, a term under which Dr. Claye Shaw disguises lust for blood as a real and prominent motive in many cases of murder. Most of the papers provided excellent discussions, and as a whole the volume fully bears out our previously expressed belief that the membership of this society might be doubled with great advantage, both to medicine and law, and to the active practitioners of one and the other.

The seventeenth and eighteenth laboratory reports[11] of Messrs. Southall Brothers and Barclay are issued together in a pamphlet which contains records of the examination of drugs, chemicals, and galenical preparations in the firm's laboratories. The details are naturally of importance to chemists and pharmacists, though many of the matters touched on are of wider interest. Arsenic continues to be a serious impurity in certain chemicals, though it seems practically to have disappeared from others, such as citric and tartaric acids and glycerine. Commercial samples of liquid extract of hydrastis were found to vary considerably in alkaloidal strength, and it is suggested that a definite strength for this preparation should be officially fixed. Sundry minor researches are recorded, one of which, on the loss of strength undergone by spirit of nitrous ether, showed that it is due to evaporation and not to decomposition; when exposed in an open measure as much as 42 per cent. of the ethyl nitrite was lost in half an hour. The firm will send a copy of the pamphlet to any of our readers on application.

In *Thornton on Patents*[12] the author, Mr. A. A. THORNTON, a consulting patent agent, sets forth the rules obtaining, both in this country and abroad, with regard to the protection of new inventions. His explanations are very clear, and an excellent index, supplemented by full details as to the contents of each chapter and marginal notes to the text, make easy the search for information on any particular point. Lists of cases are also supplied, with brief notes on the points involved, and the view held by the court on the most important of them. It is a reference book for the information chiefly, perhaps, of solicitors, but is written in such style as to be equally useful to those who have made some invention and desire, before putting themselves in the hands of a patent agent, to see what steps are necessary to obtain a patent.

MR. H. D. SEARLES WOOD, President of the Section of Public Health and Sanitation of the Japan-British Exhibition next summer, calls the attention of all those engaged in matters which come within the scope of the section to the advisability of making it worthy of the occasion. The Japanese Government are keenly interested in all matters of public health and sanitation, and the arrangement made by that Government promises to provide at the White City a very complete demonstration of the progress made by Japan.

[8] *A Beautiful Arm. A History of the Vaccination Delusion.* By Amos Booth, of Leicester. London: Sampson Low, Marston and Co., Ltd. 1909. (Fcap. 8vo, pp. 142. 2s.)

[9] *Tuberculosis Among Certain Indian Tribes of the United States.* By Alis Hrdlicka. Smithsonian Institution, Bureau of American Ethnology, Bulletin 42. Washington: Government Printing Office. 1909. Med. 8vo, pp. 55, plates 22.)

[10] *Transactions of the Medico-Legal Society.* Vol. vi. London: F. J. Lamb. 1909. (Pp. 248.)

[11] *Seventeenth and Eighteenth Laboratory Reports, 1908-1909.* Edited by E. W. Mann, Ph.C., F.C.S. 1910. Southall Brothers and Barclay, Limited, Birmingham. (Demy 8vo, pp. 47.)

[12] *Thornton on Patents, British and Foreign.* By Alfred Augustus Thornton, Consulting Patent Agent. London: Charles Jones, Ltd. (Roy. 8vo, pp. 575. 21s.)

## MEDICAL AND SURGICAL APPLIANCES.

*Apparatus for Cold Cautery and Thermo-penetration.*

A NEW electrical apparatus, in which von Lepell's system of high-frequency currents is employed, has lately been introduced for thermo-penetration, or the delivery of internal heat, and also for administering what is known as the "cold" cautery. Its value in the latter respect has been tested for rectal operations at St. Mark's Hospital, London, and the surgeon concerned (Mr. F. C. Wallis), after a little preliminary difficulty in obtaining a suitable current for the spark, pronounced it very successful so far as his trials had gone. The apparatus, which has been brought out by Mr. K. Schall (75, New Cavendish Street, W.), is remarkably simple and compact. For cautery one of the poles is connected to a needle, and when the needle is brought close to the body there is a discharge of a spark, about half a millimetre in length, which rapidly destroys the tissues at the point of impact, so that deep incisions may be made without haemorrhage. The other, and perhaps the chief, purpose of the apparatus is to give thermo-penetration, as distinct from the more superficial heat-production of hot-air or electric-light baths. Von Lepell's high-frequency system has a much smaller voltage, but a higher milliampèrage, than the type of high-frequency usually employed, and it is stated that with these new currents no sensation is experienced other than that of the rise in temperature, and no chemical or physiological effects produced other than those of heat. Given an apparatus for delivering and controlling the internal heat certainly and efficiently, various uses will suggest themselves. Good results in the treatment of gonorrhoeal rheumatism are reported from the Continent; the coagulation of the albumen which takes place under the continued influence of the current may furnish a means of destroying tumours, and it is stated that deep local anaesthesia can be produced, although this last effect requires further investigation.

## MEDICINAL AND DIETETIC ARTICLES.

*Antileprol.*

THE value of chaulmoogra oil for administration in leprosy has long been recognized, but it is far from being an attractive drug, and often produces gastric disturbance. We have received samples of a purified form of this oil, which has been introduced with the name Antileprol by the Bayer Company (19, St. Dunstan's Hill, London, E.C.). The nature of the purification which has been effected is not stated. The sample which we examined was a liquid oil, bright, practically colourless, and forming a practically neutral solution in alcohol. It is intended for either hypodermic injection or mouth administration, and for the latter purpose it is also supplied in capsules containing respectively 0.5 and 1.0 gram (7½ and 15 grains). Various reports on its employment which are submitted indicate that the avoidance of unpleasant complications by the use of the purified oil permits of more prolonged treatment, and has led to favourable results.

## FERRO-SILICON:

### ITS USES AND DANGERS.

A SUPPLEMENT, in continuation of the Report of the Medical Officer for 1908–9, on the nature, uses, and manufacture of ferro-silicon, with special reference to possible dangers arising from its transport and storage,[1] has been issued by the Local Government Board. Associated with Dr. Monckton Copeman, the Medical Inspector of the Board, in this inquiry were Mr. Samuel R. Bennett, one of H.M. Inspectors of Factories, and Dr. Wilson Hake, Lecturer on Chemistry at Westminster Hospital.

Ferro-silicon is an alloy of iron and silicon, of which the low-grade variety, containing not more than 15 per cent. of silicon, is made in blast furnaces to a considerable extent in this country; while the high-grade class, containing from 25 to 95 per cent. of silicon, can only be made at the very high temperature of the electric furnace. The latter variety is imported from parts of France, Austria, Scandinavia, and other places where ample electrical energy is derivable at a low cost from water power. The annual importation of this material into England amounts to about 4,000 tons. Ferro-silicon forms an essential ingredient as regards its silicon content in the manufacture of certain grades of steel, to which it is added in small quantities while the metal is in a molten condition. The proportion of silicon added to steel during manufacture is primarily dependent on the nature of the finished product required. Generally speaking, the presence of silicon in small amount has a hardening effect on iron, similar to, but to a much less extent, than is the case with carbon. But of greater importance than the hardening effect is the property silicon possesses of transforming combined carbon into the graphite condition, and thus producing a softening effect. Advantage is taken of this peculiarity in almost all processes of iron manufacture.

The functions of silicon in the manufacture of and its effects on the physical properties of steel are as follows:

(*a*) Silicon in being oxidized in the furnace or converter acts as a metallurgical fuel.

(*b*) Owing to the heat produced it will cause molten steel to remain fluid for a long time, and so enable thin and intricate castings to be made.

(*c*) It acts as a reducing agent or otherwise to prevent formation of blowholes in castings.

(*d*) It is used as an admixture in steel to produce certain important physical properties in the highest degree.

References are made in the report to accidents, fatal and otherwise, which are known to have occurred in connexion with the transport and storage of ferro-silicon. Dr. Copeman states that the earliest record he has found of danger incidental to the handling of high-grade ferro-silicon, manufactured in the electric furnace, is contained in a paper published in 1904 by the late Dr. Dupré, F.R.S., at that time chemical adviser to the Explosives Department of the Home Office. This paper refers to the circumstances attending a series of explosions which occurred in connexion with a consignment of this material from the Cunard Company's steamship *Veria*, at the Alexandra Dock, Liverpool. These explosions were due, in the opinion of Dr. Dupré, to the evolution of an inflammable gas consisting, in a far greater part at any rate, of phosphoretted hydrogen. Another observer, Mr. Watson Gray, found also, besides phosphoretted hydrogen, small amounts of acetylene and arseniuretted hydrogen among the gases generated in the casks.

In January, 1905, on the steamship *Vaderland*, during a voyage from Antwerp to New York, of the steerage passengers lodged in the forward compartment of the vessel, over a hold in which a cargo of ferro-silicon was stored, fifty were made seriously ill by fumes given off from this substance. Of these, eleven died on the voyage. The authorities became seriously alarmed, and although the medical officer on board certified the deaths as due from pneumonia, the steamer and its passengers were quarantined on suspicion of the vessel being infected by plague. As the result of official inquiry at the time, the deaths were attributed to "unknown causes," but subsequent fuller inquiry resulted in the conclusion that the sickness and death of so many of the steerage passengers were due to fumes given off by the cargo of ferro-silicon.

In this country several deaths have occurred from the fumes. In October, 1905, Dr. J. F. Robertson, of Althorpe, was called to the Keadby Canal to see two children, aged 3 and 4 years respectively, who were lying ill on board a "keel" (canal boat). In a letter to the JOURNAL of May 15th, 1909, p. 1179, Dr. Robertson stated that on arrival he found one child was already dead, whilst the other was lying in an unconscious state, covered with a cold, clammy sweat, the pulse hardly perceptible, the breathing slow and light, and the pupils somewhat dilated. Crepitations were heard all over the chest, but nothing else abnormal. The child died soon afterwards. The father and mother were also suffering from an abdominal pain, sickness, and diarrhoea. As Dr. Robertson was unable to certify the cause of death an inquest was held. A *post-mortem* examination was ordered, but nothing was observed but some congestion of the lungs. Chemical examination was made on portions of the viscera together with samples of the food taken by the family. The analyst reported that no evidence of poisoning could be found in the viscera, but that a sample of the cargo proved to be ferro-silicon. The jury returned a verdict to the effect that the cause of death was narcotic poisoning, caused by the fumes of ferro-silicon. Other deaths have been reported from time to time as being due to the same cause. In the JOURNAL of

[1] London: Wyman and Sons; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. 1909. (Cd. 4958). 1s. 11d.

January 9th, 1909, p. 127, an account is given of the inquiry as to the cause of the deaths of five Jewish emigrants during the voyage from Antwerp to Grimsby. The deaths were traced to the inhalation of fumes from 9 tons of ferro-silicon the ship was carrying. In the JOURNAL of July 3rd, 1909, p. 42, an account is given of the death of four passengers on board a Swedish steamer which carried 15 tons of ferro-silicon.

The *post-mortem* appearances, and from the bacteriological and chemical examinations carried out in connexion with persons dying in ships which carried ferro-silicon, leave no doubt that the cause of death has been clearly established as due to emanations from the cargo of ferro-silicon, the chief gas being phosphoretted hydrogen, along with a small quantity of arseniuretted hydrogen. The matter of the conveyance of ferro-silicon was very fully investigated, and the works of over twenty firms using the material were visited. Dr. Copeman also visited certain of the manufactories in the south-eastern district of France, from whence ferro-silicon is exported to this country, and the different processes of the manufacture are described. Dr. H. Wilson Hake analysed seventy-one samples. Mr. Bennett's report deals with the composition and structure of ferro-silicon.

In view of the facts disclosed by the report of Dr. Dupré and Captain Lloyd, issued in 1904, a large number of shipping companies came to the conclusion that ferro-silicon is dangerous to carry from the shipowners' point of view, and thereupon announced in April, 1905, that they would only carry in bulk ferro-silicon which is the product of the blast furnace.

After the deaths on board the steamship *Ashton* in December, 1908, a conference of steamship owners and agents, representing a number of East Coast lines, adopted a unanimous resolution to the effect that "this traffic (that is, ferro-silicon) is not to be carried." Notwithstanding, however, that practically all the chief shipping companies have determined, under existing circumstances, to discontinue acceptance of consignments of ferro-silicon from abroad, a certain amount of the material continues to reach this country, owing to the fact that some owners are willing to accept the possible risk. As a consequence, what business remains has been transferred from East to West Coast ports, and, at present, practically all consignments, comparatively small in amount, from France, Austria, and Italy to this country are being shipped from Treport to Manchester. Owing to the smallness of the supplies now coming into this country agents' and manufacturers' stocks are becoming depleted, and, as no electrically produced ferro-silicon is being produced in this country, considerable anxiety exists as to how future needs are to be met.

The report ends with a summary of conclusions drawn up by Dr. Copeman, who also submits draft regulations as to precautionary measures in connexion with the storage and transport of ferro-silicon.

One of the conclusions is that low-grade ferro-silicon (10 to 15 per cent.) produced in the blast furnace does not evolve poisonous gases even in the presence of moisture, and has not given rise to accidents. Grades of alloy made in the electric furnace up to and including 30 per cent. appear to be "practically innocuous," and this statement applies probably, "though in a considerably less degree, to those of 70 per cent. and over." The proprietors of iron and steel works are therefore advised to restrict their orders to grades of this material, either not exceeding 30 per cent, or 70 per cent. and upwards according to the special nature of their requirements. The regulations suggested include the following requirements: (1) That ferro-silicon, after being broken up into pieces of the size in which it is usually sold, should be stored at the place of manufacture under cover, but exposed to the air, for at least a month; (2) that manufacturers should be required to mark each barrel or package in a way to show the nature, percentage, date of manufacture, and place of origin of each consignment; (3) that the carriage of ferro-silicon on vessels carrying passengers should be prohibited, and that when carried on cargo boats it should, if possible, be stored on deck; (4) that these regulations should apply also to river or canal barges; (5) that storage places at docks or works should have provision for free access of air, and should not be near workrooms, messrooms, or offices.

# THE PLAGUE.

## PREVALENCE OF THE DISEASE.

### INDIA.

THE deaths from plague in India during the following periods in 1909 were as follows: August 28th to 31st, 834; in September, 10,632; in October, 17,362; in November, 18,379; in December to the 18th, 14,189.

The chief centres of plague during the periods in question from August 28th to December 18th: The deaths from plague in the Bombay Presidency numbered 13,065; Bengal, 2,234; United Provinces, 18,117; Punjab, 8,770; Central Provinces, 12,672; Rajputana, 5,419; Cashmere, 165; Central India, 4,514; Hyderabad, 120; Mysore State, 2,662; Madras Presidency, 1,518; Burma, 469.

### MAURITIUS.

During September (18th to 30th) 30 cases and 20 deaths were reported; in October, 98 cases, 59 deaths; in November, 154 cases, 74 deaths; in December, 92 cases and 43 deaths.

### HONG KONG.

During the week ended November 27th, 1909, one fatal case.

### CHINA.

Canton was declared free of plague on August 1st. In Amoy 460 cases of plague were reported between June 27th and August 14th; on August 31st the epidemic was reported to be extinguished.

### JAPAN.

During August and September a few cases of plague occurred in Kobe, 16 deaths from the disease having occurred during these months; in Schikoku 2 cases were reported on August 23rd.

### FORMOSA.

In the early part of the year, January to June, 1909, 1,015 cases of plague were reported. In July 12 cases occurred.

### TURKEY.

From Adalia, between June 25th and July 25th, 5 cases of plague were reported; on October 28th, 1 death from plague occurred.

### EGYPT.

Between August 14th and October 29th, cases of plague numbered 54. Amongst the places slightly infected were: Zifta, Dessuk, Alexandria, Port Said.

### BRITISH EAST AFRICA.

At Kisumu, in July, 8 cases plague reported; during August, 4 cases were notified.

### GERMAN EAST AFRICA.

Plague was declared extinguished on September 17th, 1909.

### THE AZORES.

Plague reported to be extinguished on September 26th.

### SOUTH AMERICA.

*Venezuela.*—Between June 1st and August 16th 25 cases of plague reported. On September 7th Venezuela declared free from plague.

*Ecuador.*—At Guayaquil, between August 15th and September 15th, 74 cases of plague declared.

*Peru.*—In all Peru, from August 28th to September 4th, 13 cases of plague reported, with 9 deaths from the disease.

*Chili.*—Between August 18th and September 5th 2 reported cases.

### TRINIDAD.

No cases of plague in Trinidad since July 18th.

### UNITED STATES OF AMERICA.

At Sunol, California, on August 2nd, one case of plague reported; at Alameda, California, one case reported to have occurred on September 24th.

### HAWAII.

Between June 18th and August 16th 13 cases of plague reported.

### RUSSIA.

At Kugisenaul, in the Ural district, between August 5th and 20th, 23 persons died of plague.

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THE report presented by the council to the annual general meeting of the Royal Meteorological Society last week stated that the council had forwarded a memorial to the Royal Commission which is now inquiring into the work of the University of London, urging that the time is fully ripe for placing the study of meteorology on a more satisfactory basis, and for its inclusion among the subjects for degree examinations. Mr. H. Mellish, the President, afterwards delivered an address on the relations of meteorology with agriculture.

# THE RECENT MEMORIAL OF THE INDEPENDENT MEDICAL PROFESSION OF THE BOMBAY PRESIDENCY TO THE SECRETARY OF STATE.

[FROM A CORRESPONDENT.]

THE public services in India have of late years become the object of a good deal of hostile criticism—some honest and useful, but a good deal dishonest and futile. Among them the Government Medical Service, which has for long been of incalculable value to the country, has come in for its share of criticism of both kinds.

The so-called "Swadeshi" movement, combined with the existence of an Indian medical profession which has been built up by the enthusiastic labours of succeeding generations of Indian Medical Service officers, has now, in the great majority of civil stations, removed the factor of private emoluments, and we must therefore take all references which may be made to the "lucrative private practice" of the Indian civil surgeon with something more than a grain of salt. The existence of this private practice was, however, in former days one of the main attractions of the service.

The memorial addressed to the Secretary of State for India by the Bombay Medical Union, dated September 8th, and reproduced in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of October 9th, 1909, purports to be the representations of the "independent medical profession of the Bombay Presidency," held under the chairmanship of Sir Balchandra Krishna, L.M.Bombay University, a former student of the Grant Medical College. This memorial contains statements of genuine admitted grievances and demands for much-needed improvements, mixed up with requests which are unreasonable or impracticable—arguments which are specious, insinuations against the professional efficiency of honourable and distinguished men, and some assertions which are demonstrably untrue.

The question, however, of the destruction of an important public service, should not be argued either from the point of view of the vested interests of that service, or from the view of the interests of a political coterie in Bombay actuated by motives of hostility towards the European element in the Indian public services, but from the much broader standpoint of the interests of the Empire as a whole.

Keeping this in mind, it may first be pointed out that the object for which the Indian Medical Service primarily exists is the medical care of the Indian army in peace and war. The civil department is the highly efficient reserve on which the Government will draw (and has repeatedly drawn) in times of national stress. The necessity of maintaining unimpaired the efficiency of the Indian army will not be disputed. The officers of the Indian Medical Service have accompanied the forces on many an arduous campaign, nor have they been found wanting on occasions which would have strained to breaking point any but the most efficient department. This efficiency has been maintained through the traditions of a service which, in spite of great official discouragement, has always held that the "good doctors" are its most creditable members.

This service has attracted the best type of young English surgeon—the man who has taken brilliant or respectable qualifications, has held hospital appointments, and combines professional enthusiasm with a healthy desire for a life of freedom and adventure. In the face of such manifold discouragements as obtain at present, the service will not attract such men much longer, but it will be a bad day for the Indian army when they cease to present themselves at the entrance examination.

The man who enters for the Indian Medical Service under present conditions expects to have some five or six years of military work, during which he will become acquainted with Indian dialects, customs, and methods; will have a somewhat monotonous but useful existence in cantonments; will "rough it" on service once or twice; and when he has been through the mill will be eligible for the more interesting professional work of civil employment, in which he believes he will find ample material for any branch of medical work which he may have an inclination to follow. It is true he will be cut about £40 of his annual income for this privilege, but he is willing to meet it. In his capacity as civil surgeon he will be the final medical and surgical authority in a district containing a million or more of souls; the administrator of a hospital, a jail, and several dispensaries; the sanitary adviser of a municipality; the professional adviser of the civil servants and most of their families; the Government medical referee in the enrolment of the subordinate civil servants and police, and on questions relating to sick leave and retirements on pension caused by ill health; and last, but by no means least, he is the final and expert adviser of the Crown on all matters pertaining to homicide, suicide, rape, infanticide, grievous hurt, and all other medico-legal work of the gravest and most responsible character.

This extraordinary conglomeration of expert assistance the Government expects to get, and does get, in return in the great majority of cases for the pay of 600 to 800 rupees a month. This is the service which the Secretary of State is asked to destroy and he is asked also to diminish the efficiency of the medical service of the military forces, for is it likely that the type of English surgeon above described will continue to be attracted to a service the most attractive part of which from a professional point of view is done away with? The particulars of the memorial may now be examined.

## I.—*The Service "Monopoly."*

We are told of "the acknowledged anomalies and abuses of the existing monopoly of the Indian Medical Service" (par. 1), which, it is alleged, has "not only created grave dissatisfaction, but has also prejudicially affected the cause of science and the public revenue"; after enumeration of the gazetted medical appointments in the Bombay Presidency, reference is made to "the total and systematic exclusion of the sons of the soil, however qualified and deserving," from all medical appointments worth having.

From this it would be concluded that the Indian Medical Service was open to Europeans only. A reference to any list of successful candidates will at once show a number of native names, but this would not give an accurate idea of the actual proportion, inasmuch as the names of many natives, especially those of Parsees, are English in character. Moreover, the list would not show the Eurasian element. The Indian Medical Service is open without restriction to natives of India who care to enter for a competitive examination, can pass the physical tests, and possess a registrable qualification. This involves some work in the United Kingdom, an examination in London, and a valuable course at the Military Medical School, during which successful candidates draw pay.

The "Independent Medical Profession in India" probably strongly objects to the expense entailed on native aspirants for medical commissions by this residence in England, but can it be doubted that in the interests of the Empire it is a good thing for young Indians, who are to become gazetted officers, and the colleagues of English officials, civil and military, and who will become as civil surgeons persons of influence in native cities—can it be disputed that it is a good thing that they should have seen something of English life and conditions, and have been compelled to realize by residence that, after all, England is not the decadent Power which so many Indian seditionists love to picture it? The voyage between Bombay and the Channel is in itself an education on the magnitude of English power and English commerce. It is undoubtedly in the interests of the Empire that young Indians should be encouraged, and assisted, to visit the United Kingdom if only for a few months, and any breach of the system which takes them there is to be deprecated.

Any expense which this system entails is more than compensated for by the remarkable cheapness of the medical curriculum in India, and that this is of a very high quality is proved by the facility with which students who have been unsuccessful in their final examinations at Indian universities qualify at home before one or other of the examining boards.

Next, "the advancement of medical science" has been hindered by the existence of a Government medical service throughout the peninsula. Any candid man who will take the trouble to study the recently published *Transactions* of the Bombay Medical Congress of 1909 will

be able to judge as to what class of men is doing the most for the advancement of medical science in India. The most valuable papers (not the longest—that is another story) were contributed by members of the Indian Medical Service, and out of all proportion to their numbers. It is painful that so soon after this striking object-lesson had occurred the "independent" medical profession of Bombay should give the service men such an ungrateful return.

As regards the effect on the public revenue, it has already been pointed out that the country gets a very high grade of expert work in return for pay which compares very unfavourably with that available for other public departments.

Lastly, as regards the "monopoly." The local administrations have built hospitals and dispensaries through out British India, and have equipped them at a cost of many crores of rupees. They naturally require that this valuable property shall be administered by their servants—men whose discipline, control, movements, standard of efficiency, responsibility for the care of valuable property and for expenditure, shall be directed by themselves; in other words, a disciplined public service must do the greatest part of the medical work of the country.

On the other hand, the Government of Bombay has indicated that it will go no further in adding to medical institutions. If more are required (and they are required) they must be built by private charity, and be administered and officered by honorary staffs, as is the case in England. A Parsee hospital on these lines has arisen in Bombay. It forms the commencement in the Western Presidency of opportunities to the independent medical profession to develop their own class of consultants. But there are already posts for honorary physicians and surgeons at the leading Government hospital in Bombay (posts which might well be increased) which afford opportunities for the acquisition of professional status and experience similar to like appointments held at non-Government hospitals in England.

The suggestion contained in the memorial that natives of India who decline to enter a disciplined Government service are thereby deprived of professional opportunities is not justified by the facts.

### II.—*The Medical Professors.*

We now pass to the consideration of the system under which the medical teaching is carried on at the most important (not the only) medical school in Western India —the Grant Medical College, which nowadays has nearly 550 students on its rolls.

Among the alleged grievances most emphasized by the memorialists is the fact that the majority of the professorships are reserved for officers of the Indian Medical Service, who, it may again be remarked, need not necessarily be Europeans.

The insinuation which runs throughout the memorial is to the effect that the present staff are incompetent, and have been placed by official favour in billets for which they are unfitted. We read the perfectly reasonable demand that "in the interests of learning and science the Principal and professors of the Grant Medical College and the attached J. J. Hospital should be appointed solely on the grounds of scientific attainments and teaching powers." We are told of "the system of appointing men to important college and hospital posts by the test of membership of the service, and, according to service exigencies, *to the disregard of all other considerations*" (our italics); of the policy which "had till then" (Lord Reay's time) "reserved appointments for members of the Indian Medical Service, *irrespective of fitness or aptitude*."

It is extremely easy to make these covert insinuations against the professional capacity of a body of honourable men, who have the grave responsibility of preparing Indian youths for membership of a most important profession in one of the largest provinces under the Crown, but such a method of influencing the mind of a Secretary of State must shock those acquainted with the facts.

The present Professor of Midwifery is an M.D. Durham University, has held the appointment for something like seventeen years, and is recognized as the highest authority on his speciality in the Bombay Presidency. The Professor of Medicine holds the degree of M.B.Lond., and has been connected as a physician with the medical school for the greater part of his twenty-three years' service. The Professor of Pathology and Second Physician possesses the M.D., B.S.Lond., has held the post for seven years, and was before this for many years Professor of Physiology. The two surgeons, Professors of Surgery and Anatomy respectively, have the F.R.C.S.Eng. The whole-time Professor of Physiology, who also holds the minor Professorship of Hygiene, is M.D. and D.P.H. of Cambridge. The Professor of Chemistry, who is also Chemical Analyser to Government, is the author of the leading textbook in India on forensic medicine and toxicology. The deputy who has acted for him in recent years during furlough is a graduate of Edinburgh University, and has been a scientific chemist from boyhood.

The department of the Chemical Analyser (so important in the administration of justice) is a service within a service. The Government now takes young men who have an inclination (that is, "fitness" and "aptitude") for this sort of work, attaches them to various laboratories throughout India, gives them a training which is unique, and utilizes their highly expert services as occasion offers.

The Professorship of Bacteriology, a post recently created by Government, is held by a native graduate M.D.Bombay and M.R.C.P.Lond., a distinguished former student of the school but not a service man.

We may now consider "acting" appointments. When a temporary vacancy occurs from furlough or sickness a junior member of the service is appointed by the Surgeon-General to "act." The suggestion that the Surgeon-General is prepared to put into one of these acting appointments any medical cypher, who through "service exigencies" has to be fitted in somewhere, is one which has no foundation. It is the business of the head of the civil medical department to know his men, and he appoints some one, whose complete record is before him, whose aptitudes are known from the nature of special studies which have been followed, or appointments which have been held in England, or from original work which has been done in India. If this man be tried and found wanting, whether in professional knowledge, tact in dealing with students, or ability to teach his special branch, he is certainly not appointed again. If, after trial, his work is found to be good he is noted as the "waiting man" for the appointment when in course of time a substantive vacancy occurs. The system is obviously good, and it might be difficult to improve upon it.

Again, as promotion vacancies occur among the staff, the Professor of Anatomy becomes the Professor of Surgery; the Professor of Pathology becomes Professor of Medicine. The chairs of Obstetrics and of Ophthalmology are subjects apart. There is nothing in this system which differs from that which obtains in medical schools in the United Kingdom.

Finally, we may note that this is not only a civil, but also a military, medical school, where young assistant surgeons are trained for the Indian Subordinate Medical Department. Here the maintenance of discipline under professors connected with the military system becomes a matter of necessity.

### III.—*Multiple Appointments.*

We now come to the grievance of the "heterogeneous and incongruous combination of appointments held by the same individuals who cannot, in the nature of things, be expected to possess the necessary combination of qualifications for the posts," and examples are quoted which illustrate the looseness and inaccuracy of the memorial.

Thus, "the Professor of Midwifery and Diseases of Women and Children" (the full title is spun out) "acted also as professor of botany." This refers to the fact that for six months during the absence of the present incumbent the acting professor of midwifery held also the minor professorship of botany, a subject in which he had taken honours at his university, and which he has since maintained as a matter of interest and recreation.

Again, "the professor of anatomy was deemed qualified to hold the chair of midwifery." This appears to refer to a fairly recent occasion when a gentleman who had been acting as professor of anatomy and had left Bombay was called back to fill a sudden vacancy at the hospital for women for eight weeks during the vacation—work which he was well qualified to perform as an expert abdominal surgeon. It is true there were no lectures to be given

and but few students about, but this is called "holding the chair of midwifery."

Next, "pathology, chemistry, and medical jurisprudence have found the same exponent." It is difficult to fix this, but it appears to refer to an occasion when the Chemical Analyser left in a hurry caused by sickness, and during the interval of a week or so pending the arrival of his successor the professor of pathology was gazetted to take charge of the office under a "paper appointment." Such "paper appointments" are made in exceptional circumstances to secure continuity in the routine administration of the correspondence connected with every Government office, or to indicate the responsibility of a particular commissioned officer for the care of the office itself. Such passing appointments involve no teaching and carry no pay.

Next, the Secretary of State is informed that "one professor was deemed versatile enough to be capable of doing justice to such widely divergent subjects" (in succession) "as botany, chemistry, medical jurisprudence, etc.," seven professorships in all being named. As it stands in the memorial, it would appear to one not conversant with the facts that this occurred the day before yesterday. It appears to refer to the official history of that many-sided man, the late Wellington Gray, who more than twenty years ago was a great power in Bombay as a physician, surgeon, and ophthalmologist, and who presided over the school at a time when, in comparison with its present state, its size was microscopic, and when an "independent" medical profession could hardly be said to exist. He became Principal and Senior Medical Officer in 1888.

### IV.—*The Professional Qualifications of Non-Official Native Practitioners.*

Next we come to the "independent medical profession" itself, which is represented as a collection of high graduates—on the one hand left out in the cold by their happy medical brethren of the Indian Medical Service under the present system, and, on the other hand, quite capable of taking the place of the service men. According to the memorial, there are in the Bombay Presidency one M.D., D.Sc.Lond.; two F.R.C.S.Eng.; "over half a dozen" F.R.C.S.Edin.; five F.R.C.S.I.; three M.R.C.P.Lond.; one M.R.C.P.Ed.; one M.B., B.S.Lond.; one M.D. Cornell University, U.S.A.; five M.D.Bombay; one M.D.Freiburg *(honoris causâ)*. From these it might be concluded that twenty-six highly qualified individuals in the Presidency were out in the cold. But while, on the one hand, the memorialists have endeavoured to decry the professional abilities of the Indian Medical Service, they have, on the other, attempted to "crack up" the "independent" forces, for we must eliminate the three M.R.C.P.Lond., one of whom should have been coupled with a F.R.C.S., and the others with two of the M.D.'s. Two at least of the Irish Fellows are Parsee ladies engaged at women's hospitals. This reduces the number to twenty-one in the whole Presidency. Of the remainder, one F.R.C.S.Eng. was an honorary surgeon at the J. J. Hospital, and lecturer on diseases of the ear and throat. After a period of friction he resigned his appointment, and started a hospital of his own in which excellent surgical work has been done. The other F.R.C.S.Eng. (and M.R.C.P.Lond.) is a member of the honorary staff of the J. J. Hospital, and lectures on diseases of the ear and nose. Of the "more than" six Edinburgh Fellows—two are on the surgical staff of the J. J. Hospital; and a third is an assistant surgeon, who for long had a teaching appointment at the Ahmedabad Medical School. Of the three (male) Irish Fellows, one has for a long time been connected with the medical school in Bombay as a teacher on obstetrics with opportunities for practical work; a second was for many years teacher of chemistry, and now specializes in ophthalmology. One M.D.Bombay is a professor at the college; a second is a tutor on midwifery; and the M.D.Freiburg *(honoris causâ)* has charge of the Bombay fever hospitals (a paid appointment), enjoys an extensive practice, and is a recognized authority on the subject which he has made his own.

This accounts for ten persons, mainly in Bombay city itself, out of the alleged twenty-one individuals in the whole Presidency. It does not appear that effort has been lacking on the part of the official portion of the profession or of the Government to advance their interests in every possible manner.

It is difficult in the absence of a proper medical register for India to fix the qualifications and localities of those Indians in this Presidency who have taken European diplomas. In the latest Churchills' *Medical Directory*, the list for Bombay City shows thirty-seven native and Eurasian names. This list is not complete, as one F.R.C.S.Eng. is not found there. Of these, twenty-two show the L.R.C.S.Edin. or triple qualification of Edinburgh and Glasgow, and several of them have the M.D. of the University of Brussels. All the better qualified men on this list have received official recognition of some sort, either at Government or municipal hospitals, or under the Health Department; and one has retired from the service of a native State.

### V.—*The Control of Medical Teaching Institutions.*

Want of space allows only of attention to one further misrepresentation in this memorial, namely, that concerning the "anomaly" of the "dual control of the Surgeon-General and the Director of Public Instruction over the . . . Grant Medical College and the J. J. Hospital. Principals after Principals (*sic*) have protested against this anomaly, etc.," and the demand is made later on that all control of the college and "teaching side" of the hospital "should be vested in the Director of Public Instruction alone, and that the Surgeon-General should have no control over the professors and teaching staff of the college and hospital.'

It is true that Principal after Principal has protested against the anomaly of the Director of Public Instruction having control over a medical institution. From the nature of the case this distinguished layman can know little of the complexity of medical work, and certainly is not in a position to estimate the respective merits of the professors' abilities, or to be a judge of the claims of candidates for appointments, to say nothing of the strange demand which is now made that he should control the clinical teaching of a hospital. His own limitations are recognized in practice by the Director of Public Instruction (who is nominally the Director of the Medical College) when he refers questions connected therewith to the Surgeon-General for his opinion and advice, which is freely given in the public interests. This is called "control claimed to be shared by the Military Head of the Service."

It is an interesting sidelight on the unpractical character of the memorialists that they should demand that the lay control over a medical school, which is now both nominal and anomalous, should be made absolute.

In conclusion, the Indian Medical Service can hardly be congratulated on the brilliancy of service prospects. On the one hand, with a Government apathetic in the rewarding or even in the protection of their medical servants, and which does not scruple to humiliate them by public orders which are insulting to the whole profession; and, on the other hand, with every evidence of outside hostility, the position of service men seems by no means to be envied. Young Englishmen with first-class qualifications might well be instructed to pause before compromising their careers by entering the service.

This memorial, replete with inaccuracies, innuendoes, and a want of common charity towards honourable members of the medical profession, is not likely to raise the Indian medical profession in the estimation of medical men in other portions of the British Empire. There are genuine reforms which might well have been urged, as, for instance, that appointments in the Uncovenanted Service might be increased in number; that the pay of such civil surgeons should be greatly improved; that promotions to the better civil stations should be given for the best professional work. That every facility and even pecuniary assistance should be afforded to promising young Indians to go to the United Kingdom to enter the Indian Medical Service can be advocated in the interests of the Empire. Nay, a certain proportion of appointments in each batch might well be reserved for youths from Indian schools should suitable candidates present themselves.

But this attack on a useful public service savours too much of political faction.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the January meeting sixteen cases were considered by the Committee and grants amounting to £155 made to fifteen of the applicants. Appended is an abstract of the cases relieved.

M.D.(Durham), aged 58. Is incapacitated by hemiplegia and dependent on a sister whose income is very small. Used to be a man of considerable means, but owing to a series of misfortunes, over which he had no control, is now practically penniless. Voted £10 in two instalments.

M.B.(Cantab.), aged 41. Used to practise in London, but was obliged to give up owing to a long illness. Is now sufficiently recovered to do locumtenent work, but finds great difficulty in obtaining engagements at this time of year. No income, and wife a chronic invalid. Voted £10, of which half was subscribed by another society anxious to help the applicant.

L.S.A., aged 70. Has been quite incapacitated for the last three or four years, and is dependent on a small allowance from a local medical benevolent society and slight help from relations. Voted £12.

Daughter, aged 53, of late M.R.C.S., L.S.A. Only certain income about £10 a year, and endeavours to support herself by taking boarders, but was unable last year to cover her unavoidable expenses. Voted £10.

Widow, aged 33, of M.B., M.Ch.Glasg. Only income about £20 a year, and asks for a little help towards school fees for her only child, a boy aged 9, who is a candidate for Epsom College. Is endeavouring to obtain a post as housekeeper or companion. Voted £10.

Daughter, aged 32, of late M.R.C.S.Eng., L.R.C.P.Edin. Used to support herself as a shorthand typist, but about five years ago developed phthisis and has since been unable to work. Dependent on her mother, an Epsom pensioner, and a sister, who is a clerk. Voted £10 in two instalments.

Daughter, aged 38, of late M.R.C.S., L.S.A. Is a chronic invalid, and only able to help her mother, whose income is insufficient for the support of both. Relieved once, £10. Voted £10 in two instalments.

Widow, aged 60, of M.R.C S. No income, and dependent on children, who can ill afford to help. Relieved six times, £70. Voted £12 in twelve instalments.

Daughter, aged 72, of late M.R.C.S., L.S.A. Income less than £20 a year; earns a few shillings occasionally by needlework. Relieved ten times, £101. Voted £12 in twelve instalments.

Daughter, aged 58, of late M.R.C.S., L.S.A. Was a matron at a large school for several years, and now endeavours to support herself by sewing. Eyesight failing and health indifferent. Relieved three times, £36. Voted £12 in twelve instalments.

Widow, aged 52, of M.R.C.S., L.S.A. Income very small, but with the help of this fund has been enabled to keep a small home and bring up her family. One boy still at school, having won a scholarship. Relieved fourteen times, £162. Voted £12 in twelve instalments.

Widow, aged 65, of late L.F.P.S.Glasg. Husband's savings exhausted by long illness, ending in death about eighteen months ago; endeavours to support herself by taking boarders. Relieved twice, £10. Voted £12 in twelve instalments.

Widow, aged 36, of M.R.C.S.Eng., L.R.C.P.Edin. Asks for help to send a daughter to Canada as a mother's help. Relieved once, £10. Voted £5.

Widow, aged 58, of L.R.C.P., L.R.C.S.Dub. Unprovided for at husband's death a few years ago, and dependent on friends and the help of this fund. Relieved five times, £47. Voted £6 in six instalments.

Daughter, aged 55, of late M.R.C.S. Since father's death several years ago has supported herself by a small school, but has lost several pupils owing to competition and removals. Relieved three times, £43. Voted £12 in twelve instalments.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, London, W.

## LITERARY NOTES.

IT is proposed that the medical libraries of Berlin should be amalgamated. They include the library of the Berlin Medical Society, of the German Surgical Society, of the Dermatological, Laryngological, Otological, and Roentgenological Societies, of the Imperial Committee for the Study of Cancer, and of the Medical Department of the Empress Frederick Foundation. Most of these libraries already have a mutual arrangement which allows members of one society access to the books in the others. The new proposal, however, is to gather all the libraries of Berlin into an Association of Medical Libraries, of which Professor C. A. Ewald will be President. It is further proposed to publish a complete catalogue of the contents of the federated libraries. There are certain economic difficulties in the way of the realization of the scheme, but there is said to be good ground for the hope that these will be overcome.

Dr. Kenneth W. Millican has been appointed by the Chairman of the Municipal Commission on Tuberculosis of Saint Louis, editor of its *Bulletin*. Dr. Millican, who is a graduate of Cambridge, and received his medical education at St. Mary's Hospital, London, for several years edited the *St. Louis Medical Review;* he was also for some time associate editor of the *New York Medical Journal*, and later was on the editorial staff of the *Journal of the American Medical Association*.

S. Hamilton, B.A., M.B. (Newport, Mon.), writes:

In your article on medical poets in the JOURNAL of January 22nd there is at least one omission. No mention is made of Henry Vaughan, known as "the Silurist" (owing to the fact of his birth and residence in Siluria, which comprises the county of Monmouthshire and part of Breconshire). He was born near Crickhowell, in the vale of the Usk, in Breconshire, in 1621; was educated at Jesus College, Oxford, and returned to his native district, where he practised medicine and cultivated the muse until his death in 1695. It is said that he took some part in the Civil war, and that he was imprisoned with a certain Dr. Powell for his activity in the Royalist cause. As a poet he ought not to be forgotten. I have before me a little volume of his poems containing 300 pages. His verse is sometimes rugged, but it contains many beautiful thoughts. Little is known of him as a medical practitioner.

There are doubtless many other omissions in the article, which was mostly written from memory. The *Dictionary of National Biography* gives 1622 as the date of Henry Vaughan's birth. The writer of his life says that "where and when he obtained his medical diploma has not been ascertained, but about 1645 he began to practise as a physician in Brecknock, whence, in or about 1650, he removed to his native place (Newton-by-Usk, in the parish of Llansaintffraed, Brecknockshire), continuing to practise." Writing to John Aubrey, his cousin, towards the end of his life, he says: "My profession also is physic, which I have practised now for many years with good success (I thank God), and a repute big enough for a person of greater parts than myselfe." Antony à Wood says he was eminent for his medical skill. Some of his poems are held to rank among the finest in the English language. It may be mentioned that he was also distinguished as a writer of prose.

The *Dublin Journal of Medical Science* for December contains an article by Dr. T. Percy C. Kirkpatrick, physician to Steevens's Hospital, Dublin, giving an account of Sir Edward Barry, an Irish physician of the eighteenth century. Born at Cork in 1698, he graduated at Trinity College in 1717. In 1718 he is found "entered on the physic line in the University of Leyden," where he studied under Boerhaave and took his doctor's degree in the following year. A copy of his inaugural dissertation, *De Nutritione*, is in the British Museum. He then began to practise his profession in Cork. In 1726 he published a work entitled *On a Consumption on the Lungs*, in which he largely incorporated the substance of his Leyden thesis. In 1740 he took the doctor's degree at Dublin. He had considerable success as a physician, and in 1745 was appointed Physician General to the Forces in Ireland. In the same year he became a member of the Irish Parliament. In 1749 he was elected President of the Irish College of Physicians. In 1754 he was elected Regius Professor of Physic in Trinity College. Soon, however, his thoughts turned to London, for he was incorporated M.D. at Oxford, and in 1761 was elected a Fellow of the London College of Physicians, of which he was Censor in 1763. Barry is mentioned by Boswell, where Johnson is reported as mentioning his *System of Physic*, and saying:

> He was a man who had acquired a high reputation in Dublin, came over to England and brought his reputation with him, but had not great success. His notion was that pulsation occasions death by attrition; and that, therefore, the way to preserve life is to retard pulsation. But we know that pulsation is strongest in infants, and that we increase in growth while it operates in its regular course; so it cannot be the cause of destruction.

About 1769 or 1770 Barry left London and settled in Bath, where he died, probably in 1776. He was the author of several writings, including an account of a malignant lues venerea communicated by suction in the city of Cork (1735); an observation on bloody urine, caused by a worm in the bladder (1740); and a book entitled *Observations, Historical, Critical, and Medical, on the Wines of the Ancients* (1775), which is said to be the first work of

its kind in English. Dr. Kirkpatrick gives an analysis of his principal work, which is entitled *On Digestion*. To us Barry's most interesting writings are his correspondence with John, fifth Earl of Orrery, the biographer of Swift, which extended over many years. In these letters we get glimpses of some of the celebrities of the time. Writing in April, 1735–6, Barry says:

> I'm concerned to hear that Swift is confin'd by some Disorder; I hope nothing but a bilous (*sic*) cholic, which a few Satyrical evacuations will remove.

On May 19th, 1738, he writes of his old teacher:

> Poor Boerhaave is dying in an asthma, and, as he says himself, from a collection of purulent matter in his Thorax.

Some glimpses, too, we get of medical treatment in the eighteenth century, as in the following passages. On May 18th, 1736, Barry writes:

> I was mad enough to go to Kinsale last Wednesday and return the same Day. I inflamd my Blood by this unusual exercise and took Cold. By being twice blooded, Watergruel, and Confinement, I am now free from any Complaint of Consequence.

Then again, May 25th, 1736, he writes:

> By three times bleeding and applying Cantharides I am entirely free from a Fever, and have but weak remains of my cough, but still confine my Self to milk morning and evening, and a total abstinence from Wine. I visited my patients these two days. Dean Ward will tell yr Lordship that all this was unnecessary, and perhaps he is in the right of it, he would not believe that I had anything of a Colic when I was in most exquisite pain. Yr Conduct, my Ld, has been too much the reverse of mine, you have been too careless, and I am too anxious and busy in the use of medicines. I own I have an aversion to pain, and I know the dangerous Fire of my Constitution can only be appeas'd by a large Sacrifice of Blood. These visits of Sickness are the most usefull Lectures of Philosophy, tho' for my part I would rather continue ignorant; however, I hope they will make us more prudent in our Conduct for the future.

In a letter, dated "Orrery Quay, February 1st, 1736–7," he says:

> While I thought myself invulnerable and had bid Adieu to all pain, I was seizd with a confounded toothach. I had the suspected one extracted, but since it has raged more violently in the rest. I must wait with patience for ease. . . . I have spent these three or four nights past in chewing Tobacco and reading Rollins History.

Barry was created a baronet in 1775. He was succeeded by his son Nathaniel, whom Grattan is said to have described as the most accomplished gentleman he had ever met. He was President of the Irish College of Physicians in 1767, this being, according to Dr. Kirkpatrick, the only instance of father and son both being presidents of the College during the father's lifetime.

We have received the second edition of the *Literature of Medicine and Natural Science*, an illustrated guide to the publications of Messrs. J. and A. Churchill. The catalogue covers the whole range of medicine and surgery and the ancillary sciences, and the specimens of the drawings reproduced in the books are admirable specimens of the art of illustration. We are informed that the first edition was so well received that it had to be reprinted twice in three weeks.

*School Hygiene* is described on its title page as a monthly review for educationists and doctors. Its founders express their conviction that "there is a need for a review which shall treat of the newly-discovered gaps in education from the medical and educational aspects." They intend, whilst being rigidly scientific in their thoroughness, to be popular in form—"to present the case, that is to say, in such a way as to make clear to any well-instructed person the necessity for this alliance between the professions of teaching and medicine." The first number contains articles on co-operation in education by Professor H. Griesbach, Sir Lauder Brunton, and Dr. A. Mathieu, Presidents of the three International Congresses on School Hygiene. Among the other contents are articles on elementary schools and tuberculosis, by Dr. James Kerr; on interest in education as affecting health, by the Rev. the Hon. E. Lyttelton; and on hair colour and height, by by Dr. F. C. Shrubsall. The new periodical is published by the School Hygiene Publication Co., Ltd.

Clot-Bey, to whom was mainly due the organization of the French Medical School at Cairo, and who was at one time physician to Mehemet Ali, was once attacked by an Egyptian fanatic while delivering a lecture. The dagger fortunately slipped on the ribs, and Clot-Bey, taking a bandage from his pocket, dressed the wound himself. Then calmly continuing his discourse he said: "Gentlemen, we were speaking of the sternum and the ribs. I will explain to you why there is little chance of stabs directed from above downwards penetrating deeply." The coolness of the professor gave him an immense moral influence over his pupils. Perhaps a finer example of courage, because there was nothing of scenic display about it, is related of Dupuytren. Towards the end of a lecture he felt that a stroke of apoplexy was impending. Steadying himself by holding on to the table with his hand and fixing a foot round one of its legs, he quietly brought his remarks to a close, and then had himself taken home. Though not altogether relevant to the subject, we cannot help recalling, in connexion with these instances of quiet discharge of duty in extraordinary circumstances, the Salamanca professor who, after spending seven years in the dungeons of the Inquisition, was restored to his position. A huge audience assembled, expecting to hear some reference to what he had gone through since he had last sat in the professorial chair. They were astonished and probably somewhat disappointed when he quietly began *Dicebamos ayer* (We were saying yesterday), and continued as if there had only been the usual interval between two lectures.

# Nova et Vetera.

## ART THE HANDMAID OF HYGIENE.

ALTHOUGH the conservation of health is one of the chief objects to be aimed at by the community, as well as by the individual, and forms the reason for the existence of the medical profession, it should not be made the sole end of human life. We are, perhaps, rather apt in these days to take too much thought for our food and our raiment wherewith we shall be clad, and for everything that may in any way be supposed to affect our physical wellbeing. When the *cura cutis* became a religion among the Romans they had entered on the stage of decadence; this was the meaning of the poet when he warned them of the danger *propter vitam vivendi perdere causas*. An inevitable consequence of what may be called the health obsession is the large space which it occupies in newspapers and magazines and in the number of journals devoted to the subject. The education of the public in health matters is an excellent thing in itself, and, instead of making the doctor a figure lagging superfluous on the stage, it makes his part in life ever more conspicuous and important. But for the lay folk themselves it is not an unmixed good. The reading of such literature makes for self-consciousness and neurasthenia, even in those who start in life with a sound constitution; for others it tends to drive them into hypochondriasis, and makes them the prey of quacks.

We are glad, therefore, to welcome a new French periodical which deals with questions of health in an entirely rational manner. It is entitled *L'Hygiène*[1] and is edited by the well-known Paris physician, Dr. Maurice de Fleury, who has among his collaborators most of the leading members of the medical profession in Paris. Among them need only be mentioned Professors Bouchard, Calmette, Chantemesse, Chauffard, Debove, Dieulafoy, Charles Richet, Albert Robin, Armand Gautier, Lannelongue, Landouzy, and MM. Huchard, Metchnikoff, Léon Labbé, and Widal. This list alone is sufficient to guarantee success to the new journal, for it includes the most illustrious and most honoured names in French biology and medicine. Nor will their collaboration be a purely nominal one. Each time that occasion demands it, readers may procure from these specialists an article, letter, or interview, expressing their views and teaching upon the subject they have made their speciality. M. de Fleury has also enlisted the co-operation of a number of well known writers and artists. In an introductory article, he explains that the aim of the publication is to make attractive and living the results of modern hygienic science; to teach men how to suffer less; how to lessen the suffering they see around them; how to

[1] *L'Hygiène; revue mensuelle illustrée.* Published by Goupil and Co., Art Publishers; and Manzi, Joyant and Co., Fine Art Publishers, Successors, 25, Bedford Street, Strand, London.

husband their strength and to get all the good and happiness to be got out of life without shortening their days. The teachings of science are to be presented not only in language understanded of the people, but set off with literary grace. *L'Hygiène* takes everything appertaining to health for its province—the sanitary conditions of homes, of theatres, schools, barracks, workshops, and all public places; clothing and especially food. The hygiene of professional life will not be neglected, and the "hygiene of beauty" will find a place. In a word, every part and phase of human life, whether among the rich or among the poor, will be considered as falling within the scope of *L'Hygiène*. As Dr. de Fleury well says: "Hygiene among the poor is a safeguard of the health of the rich." In dealing with the prevention of disease the writers will not advise its readers to pass their lives, as it were, in an antiseptic atmosphere with the fear of the microbe ever before their eyes. Dr. de Fleury points out that there is a *via media* between utter neglect of the body and excessive care of its well-being. Here we may be allowed to say that sanctity has often been associated with dirt. It is true that in the later days of the Roman Empire, when the public baths had become places of debauch, moralists fulminated against them, and their teaching was, as is usually the case, carried too far by fanatics. But there is abundant evidence that bathing was common even all through the so-called Dark Ages. M. de Fleury quotes a very sensible pronouncement made by the Superior of a convent to which he was called. She said to him:

"Doctor, look after my sisters. Do not wait to give counsels of hygiene till they are actually ill. The rules of our Order are strict, and, as you are well aware, we will not break them; but they are not absurd. More than ever during this period of trouble, I intend to take care of my flock. To deserve Heaven—I except a few chosen souls—we must be able to offer to God a long, very long life of works and prayers. Do not let us shorten by imprudence our time of exile upon earth. I have remarked that anaemia, excessive fatigue which has become chronic, and a certain languor of physical vitality, strongly predispose to nervous disorders, extravagant mysticism, morbid doubt, absurd scruples—all things which my long experience leads me to look upon with dread. Give strength to my daughters that they may have healthy souls, spirits at rest and a joyous energy in long bearing their burden of duty."

We might supplement these sensible remarks of this lady by saying that fasting, though now oddly enough preached by some as a principle of hygiene, leads in most people not only to inefficiency of mind, but of body. In many, as is well known, in community life, it causes irritability of temper, which we should think, even from the strictly religious point of view, cannot make the sacrifice acceptable. Dr. Johnson seems to have experienced this effect in himself, for he quotes with apparent approval one of the Fathers who condemned fasting because it made him feel peevish.

What Matthew Arnold would have called a sweet reasonableness is the distinctive character, the "note" of *L'Hygiène*. "We will always endeavour," says M. de Fleury, "not to prescribe anything too hard, and not by exaggerated severities to restrict the narrow bounds of earthly enjoyment, particularly with regard to the pleasures of the table. Whilst advising such régimes as conform to all dietetic rules, we will take care not to exact useless sacrifices." The wide and kindly tolerance of human weakness expressed in these words is shown on every page of *L'Hygiène*, which is further distinguished by the entire absence of fanaticism, and a refreshing freedom from every sort of fad. "Sensible moderation in all things" might be taken as the keynote of every article. Professor Armand Gautier, of the Académie des Sciences and the Académie de Médecine, discusses the question of wine. He recommends the drinking of wine in moderation, particularly red wines such as Bordeaux, Macon, etc., as the best means of mitigating and ultimately destroying the terrible scourge of drunkenness. "What," he says, "does the workman who labours with his hands ask for—at least, during his meals and when he can pay for it? He asks for wine, and almost always red wine. It is this wine that the people instinctively feel as supplying them with the maximum of restoration and vigour." Tobacco is dealt with in the same spirit by Dr. Etienne Burnet of the Institut Pasteur, who says that smoking in the majority of cases, if not carried to excess, is harmless. Professor L. Landouzy contributes the first of a series of articles on tuberculosis. M. Paul Strauss describes the Pierre Budin foundations for the care and feeding of nurslings, and Madame Augusta Moll-Weiss writes with the tenderest sympathy and the clearest insight on the rearing of infants and the training of young women in the duties of motherhood. In an interview with Dr. Metchnikoff by Dr. Surger, the celebrated Russian bacteriologist discourses on his favourite theme—the dangers of the large intestine and how to protect ourselves against them by means of sour milk. We note that he has somewhat mitigated the severity of his denunciation of the colon, for while still holding it to be the haunt of mischief breeding microbes, he says: "It cannot reasonably be urged that the large intestine should be got rid of by surgical procedures." But we must replace the hurtful microbes by useful ones, such as the Bulgarian bacillus, and the beneficent varieties of lactic bacilli. M. Paul Juillerat writes on the slums of Paris, and the influence of the absence of air and light in the production of tuberculosis; and MM. Chantemesse and Borel discourse on the efficacy of the quarantine methods of Holland and Germany against the spread of cholera. In an essay on the intemperance of princes, Pierre de Nolhac deals with a theme which was handled not long ago in this JOURNAL in an article on Royal Appetites.

A section of the magazine is devoted to cookery—so important a factor in the maintenance of good health—and various useful receipts, both old and new, are to be given each month, together with a complete list of the meat, poultry, game, fish, vegetables, and fruit then in season. M. Georges Vicaire gives an amusing account of high class fourteenth century cooking based on an old recipe book of Guillaume Tirel, nicknamed Taillevent, who was chef to Charles V. M. Vicaire has had the courage to try one or two of them. One, comparatively simple, for a dish of roasted eggs, gave him the impression of a mixture of all the phials in a druggist's shop, with the various scents in a perfumer's establishment. Of some of the others we can well imagine the description *horrifique recette* to be no exaggeration. Salted whale was formerly much eaten in Lent. M. Vicaire doubts whether it formed an appetizing dish. At any rate, an experiment with the flesh of fresh whale left him an unpleasant memory; it was oily, leathery, and tasteless. Our forefathers seemed to have liked their viands strongly seasoned and peppered; they would, according to M. Vicaire, burn a modern palate.

In order to encourage interest in hygienic questions, M. de Fleury invites his readers to collaborate in the great work of improving the public health by writing for any information that they may desire on the subject; and he has established a bureau for the purpose of answering such questions, each one of which will be referred to that member of the staff best qualified to supply the answer. Further, in order to carry out more effectively the mission they have undertaken, the directors of *L'Hygiène* have organized an exhibition and a series of lectures on hygiene in connexion with the journal; these features it is intended to develop as circumstances allow.

The illustrations are almost beyond praise. Besides many interesting photographs, which include fine portraits of some of the eminent contributors, every second page of *L'Hygiène* is decorated with pictures of famous paintings and statuary, all exquisitely reproduced, and ranging from Della Robbia's figure of "Charity" on the hospital of Pistoja to J. Ring's "Cuisine au XVI$^{e}$ Siècle," from Jan Steen's "Jeune Malade" and "Un Evanouissement" to the "Petit Déjeuner" of François Bouchet. These pictures add very largely to the interest and value of the journal, which is not only the best illustrated, but the best printed journal of its kind it has ever been our good fortune to see. If the high standard of the first number is kept up, *L'Hygiène* cannot fail of success. We congratulate the publishers on the happy thought of enlisting art and literature in the service of hygiene, which has unfortunately become associated in the public mind with drains and cesspools. The journal will be the means of making the teachings of science in regard to health reach many who are not attracted by books or periodicals of the ordinary kind.

British Medical Journal.

SATURDAY, JANUARY 29TH, 1910.

## TELEOLOGY IN MEDICINE.

IN an address which he recently delivered before the Kaiser Wilhelm's Academy of the German army medical service, Professor Bier takes as his theme the importance of teleological conceptions in practical medicine.[1] Perhaps, in this country, the word "teleology" savours too much of abstract metaphysics to appeal to the medical practitioner; so we may say at once that the gist of Professor Bier's doctrine may be described in more homely terms as an enunciation of the principle that it is the medical man's duty to help Nature to help herself. But homely language also has its disadvantages; it encourages the familiarity which breeds contempt, and prompts the suggestion that the desirability of studying Nature's methods is a commonplace truism which every medical man accepts as a matter of course. The value of Professor Bier's address lies neither in its essential simplicity nor in its indulgence in the use of abstract terminology, but in its insistence that the apparently purposive manifestations of the animal organism are much more important than is usually supposed as a guide to medical and surgical treatment.

It was, he says, the "teleological" method of thinking which led him to devise his mode of treating localized lesions by induced hyperaemia, his purpose being "to bring into play the normal capacities of the blood for relieving pain, promoting absorption and resolution, and destroying bacteria." Behring observed that in diphtheria Nature's way of combating the disease is to manufacture an antidote to the diphtheria toxin; and the recognition of this "purposive" reaction led to the introduction of the antitoxin treatment. Metchnikoff's doctrine of the protective and curative significance of phagocytosis has been equally fruitful in medical practice; it has shown that for prophylactic and therapeutic purposes the body may advantageously be subjected to treatment which induces a marked leucocytosis. In this respect Professor Bier remarks, we find, as is not uncommonly the case, that a method now justified by modern scientific research was anticipated long ago by the crude empiricism of our forefathers, who, with their "setons," "artificial issues," and similar means, aimed at producing intrinsically the same result. Then we have Jennerian vaccination and modern methods of producing immunity against diseases other than small-pox by treatment with specific "vaccines," which are all based on the same principle of imitating the protective mechanism naturally inherent in the body. These are only a few examples, but they may suffice to show that strong evidence can readily be brought forward in support of what Professor Bier calls the "teleological conception" as a guiding principle for the treatment of disease.

Whilst contending that the recognition of this purposive element in vital phenomena is justified on its practical side by its utility in medical treatment, and that it is confirmed in its scientific aspect by its support from the Darwinian doctrine of the survival of the fittest, Professor Bier is anxious to disclaim association with those who interpret teleological conceptions in an unscientific and illogical manner. He particularly objects to the doctrine of "vitalism" or "vital force," which, according to some, is the logical outcome of the teleological conception. According to "vitalism," we must postulate a peculiar force or form of energy, different from ordinary physical and chemical agencies, which creates and controls the form and activity of the living organism. Such a conception he considers to be merely an appeal to the scientifically unknown; being vague and intangible, it explains nothing, but serves amongst loose thinkers as a licence for random speculation and mysticism. The attempt to replace "teleology" by "vitalism" springs from the desire to ascribe a cause to everything. To seek for the cause of phenomena is the natural desire of every scientist, and Professor Bier recognizes that scientific requirements will not be satisfied until the true causal relationship of the data under investigation have been adequately established. But the recognition of this necessity does not, in his opinion, justify the postulation of a mysterious force which, in its causal relationships, is scientifically unintelligible, or, at least, unknown, and therefore explains nothing.

On the other hand, the "purposive" element in vital phenomena is, he maintains, made manifest by a vast array of established facts; therefore the scientific usage of the teleological conception is legitimate, and does not transcend the data of exact knowledge. Nor is there any incompatibility between the teleological interpretation of presented data and the demand that these must, before they can meet the full requirements of scientific knowledge, be arranged in ordered sequence, each item of which shall appear as an essential cause followed by its logically necessary effect. Or, to express the same idea in the more abstract language of Kant and later German metaphysicians, the teleological aspect of the phenomena of vital processes is in no way incompatible with the scientific explanation of them as effects inevitably determined by definite causes.

The "teleological" method of interpreting the reactions of the body in health and disease has already, in Professor Bier's opinion, served as "the guiding star of medical practice," and will continue to be of the highest value in the fuller advancement of medical knowledge. But it must, he is careful to add, be employed with discretion. We must avoid the foolishness of exalting it to the pedestal of a universally valid law of Nature; it is no more than an induction from experience, and consequently only holds good in so far as it rests on the support of authenticated data. It would be foolish to jump to the conclusion that all reactions which are induced in the body by infective agents and morbid processes are, in their purport, conservative and beneficial. Interference with Nature's method of reacting to morbid processes is often, as every medical man knows, peremptorily demanded. Professor Bier limits himself to the sober contention, which few would be inclined to dispute, that Nature's apparently purposive mechanism for resisting disease is still very

[1] *Ueber die Berechtigung des teleologischen Denkens in der praktischen Medizin.* Festrede gehalten am Stiftungstage der Kaiser Wilhelms-Akademie für das Militärarztliche Bildungswesen, 2 Dezember, 1909. 1910. Berlin: A. Hirschwald. (Med. 8vo, pp. 19. M.0.40.)

imperfectly understood, and that the desire to unravel its secrets is still one of our greatest stimuli to advancement in the art of healing.

## THE SERUM REACTION IN SYPHILIS.

THE discovery of the *Spirochaeta pallida*, the introduction of the arylarsonates in the treatment of the disease, and the careful and extensive statistical study by Erb and others have brought about great changes in our knowledge as to the causation and treatment of syphilis. Perhaps the most striking innovation, however, is the introduction by Wassermann, Neisser, and Bruck of a serum reaction which was supposed to be specific for syphilis. Much work has been done in clinics and laboratories, and, though many points are still unsettled, it has become possible to form an opinion of the value of this reaction in many respects. The first question which has to be answered is, "Does Wassermann's reaction when positive indicate active syphilis?" Dr. F. Lesser,[1] who applied this reaction in 2,000 cases, has come to the conclusion that with a few reservations the answer to the question must be in the affirmative. A positive reaction has been obtained in scarlatina, but it differs somewhat from the syphilitic reaction, and soon disappears after the fever has passed off. In his 2,000 cases Lesser met with three positive reactions where syphilis could be excluded. A positive reaction in doubtful cases of congenital syphilis, in interstitial keratitis, and in cases where there is a suspicion of commencing general paralysis of the insane, may, he considers, be accepted as clinching the diagnosis. Dr. A. Blaschko[2] is a little more reserved on this point, but he, too, believes that a parallelism exists between the reaction and the clinical manifestations of the disease. Dr. Harald Boas[3] accepts the diagnostic importance of the reaction to its full extent, as does Dr. J. K. Beckers[4] and Dr. J. Bauer.[5]

Similar opinions have been formed by workers in this country. Bassett-Smith[6] has found the reaction one of very great diagnostic value, although the positive reactions in his syphilitic cases were not so frequent as those in the hands of others. At St. Mary's Hospital undoubted syphilis appears to have yielded a very large percentage of positive reactions, especially when the test was conducted by Fleming's modification.[7] Froude Flashman and Graham Butler[8] regard a positive reaction as diagnostic of syphilis.

On the other hand, none of these authors regard a negative reaction as excluding syphilis. The power of the serum to deflect complement appears only after a certain time, and the reaction is therefore of no value in distinguishing between a hard chancre and a soft sore. But, as Lesser points out, the presence or absence of spirochaetes will determine the diagnosis in these cases. Positive reactions have been met with in yaws, a disease which has much in common with syphilis, but the observation will not as a rule detract from the practical value of the test. The reaction occurs also in leprosy, and Drs. C. Bruck and E. Gessner[9] found it necessary to make a close investigation on this point. That the serum of lepers possessed the power of deflecting complement is certain, but the reaction, it is stated, differs somewhat from the true Wassermann reaction, and it is only in districts where leprosy is present that any uncertainty is likely to arise from this source. Boas, who has studied the reaction in 1,345 cases, found that it was positive in primary syphilis in 60 per cent. of the cases examined; it was positive in all the secondary syphilis cases and in 97 per cent. of the untreated tertiary cases. In general paralysis it was also present in all cases, while a positive reaction was obtained in 80 per cent. of the cases of tabes examined. Only in latent syphilis were the negative reactions more common than the positive (47 per cent. positive). On the other hand, Beckers obtained 90 per cent. of positive reactions in secondary syphilis, but only 55.5 per cent. in tertiary. Lesser's figures approximate to those of Boas, but he does not arrange his cases into primary, secondary, and tertiary. Flashman and Butler[10] are of opinion that negative results with the serum of syphilitics are diminishing as the technique of the experiments is improving.

The effect of mercurial treatment in changing a positive into a negative reaction is dealt with by most of the authors. Blaschko holds that the change is only temporary in the majority of cases. He is of opinion that the treatment should be continued until the reaction becomes negative, and that the practitioner should not rest satisfied merely with disappearance of symptoms. A careful control, even after this has been effected, may be of use. Unless special reasons determine otherwise, he considers that a positive reaction must be taken as an indication for further treatment. Lesser, who recognizes that mercurial treatment does effect this change in acquired syphilis, states that he has not observed it in congenital syphilis. Many of the British observers appear to consider that a positive reaction is not often changed into a negative one by the exhibition of mercury, if symptoms have been present. Further, the abuse of alcohol, which is not uncommon among prostitutes, appears to prevent the change. Boas regards the return of the positive reaction as an indication of threatening symptoms, and therefore as an urgent indication for renewed treatment. On the ground that in general paralysis of the insane the reaction is always positive, Lesser is satisfied that this disease is always syphilitic. Tabes dorsalis he regards as syphilitic when traumatic causes can be excluded, since in 74 per cent. of his cases syphilis was admitted, and in all but three of those in which it was denied the positive reaction proved the infection. The three other cases were undoubtedly traumatic. Blaschko also believes that the reaction may be utilized diagnostically in general paralysis. Henderson Smith and Candler[11] have also adduced evidence of the value of the reaction in the diagnosis of general paralysis of the insane.

In regard to prognosis, practically all authors agree that the change from positive to negative by treatment and the want of an accurate method of measuring the degree of the reaction renders it dangerous to form any opinion as to the future course of a syphilitic infection on the basis of the reaction. The second difficulty will, in all probability, be removed by further experiment, and it will then remain to be seen whether the first factor is an insurmountable obstacle.

[1] *Deut. med. Woch.*, March 4th, 1909.
[2] *Deut. med. Woch.*, March 4th, 1909.
[3] *Berl. klin. Woch.*, March 29th, 1909.
[4] *Muench med. Woch.*, March 16th, 1909.
[5] *Deut. med. Woch.*, March 11th, 1909.
[6] Bassett-Smith, BRITISH MEDICAL JOURNAL, vol. ii, 1909, p. 377.
[7] Fleming, ibid., vol. ii, 1909, p. 984.
[8] Graham Butler, ibid., vol. ii, 1909, p. 1019.
[9] *Berl klin. Woch.*, March 29th, 1909.
[10] Loc. cit.
[11] Henderson Smith and Candler, BRITISH MEDICAL JOURNAL, vol. ii 1909, p. 198.

## COMPLIMENTARY DINNER TO DR. FORD ANDERSON.

A DINNER given by the Hampstead Division in honour of Dr. J. Ford Anderson, on the occasion of his 70th birthday and of his Presidency of the Metropolitan Counties Branch, was held at the Great Central Hotel, on the 21st inst. The company consisted of a large number of the members of the Association, both of the Hampstead Division and of other Divisions, with their ladies, a muster of medical women from the London School of Medicine for Women, and the official guests. The latter were Dr. and Mrs. Ford Anderson, Mrs. Garrett Anderson, Dr. Lauriston Shaw (President-elect of the Branch), the Editor of the JOURNAL, the Deputy Medical Secretary, and Drs. Goodall and Griffith (the Honorary Secretaries of the Branch); while among the privately invited guests were several of Dr. Ford Anderson's oldest patients. After dinner the Chairman (Mr. H. W. Armit) proposed the toast of the evening in a graceful speech. He referred to Dr. Ford Anderson's career as a medical practitioner, as a member of the British Medical Association, and as a man, and before asking his friends to drink the health, presented to Dr. Ford Anderson a beautiful illuminated address signed by a large number of the members of the Association. Amid song and enthusiastic applause the youthful septuagenarian received such a welcome that when he rose he faltered with emotion. His remarks were partly directed toward expressing his gratitude to his friends for the manner in which the toast had been received, and partly toward his past, present, and future position in the Association. He referred to the interest he had taken in checking hospital abuse, and to the progress which had already been made in dealing with it. With the expiration of his Presidency of the Branch and of his term of service on the Central Council, both of which fell together in the coming summer, he would cease to take an official part in the business of the Association, but as long as he lived he would work for the Association and the profession. He also returned thanks for the reference which had been made to Mrs. Ford Anderson by the chairman, in giving the toast. Dr. Claude Taylor was most happy in his speech proposing the toast of the British Medical Association, and in reply, Dr Lauriston Shaw struck an earnest note in calling upon others to emulate Dr. Ford Anderson's example by giving time and energy to the work. Replying for the guests, the toast having been proposed by Dr. Oakley, Mr. Bergheim, an old patient and friend of Dr. Ford Anderson, spoke in terms of warm affection and great praise, in the name of what he termed the real examiner of the medical man, the patient. Mr. Bergheim's remarks were greatly appreciated, and filled to overflowing the already full cup of honour presented to Dr. Ford Anderson. The unanimous opinion expressed was that the dinner was a success. An excellent programme of music enhanced the enjoyment of the company.

## THE LATE DR. W. A. ELLISTON.

ON January 22nd a beautiful stained glass window, placed at the east end of St. John's Church, Felixstowe, in memory of the late Dr. W. A. Elliston, by his widow and family, was dedicated by the Bishop of Thetford in the presence of a large congregation. The bishop, in an address delivered afterwards, said that the congregation had gathered to honour the memory of a distinguished and emphatically many-sided man, a man who was greatly beloved and who was an ornament to the great medical profession. He had had the distinction of being President of the British Medical Association when it held its annual meeting at Ipswich, and discharged the duties of that office with dignified ability and intellectual power which reflected credit alike upon himself and the profession of which he was a member. Dr. Elliston was not only a distinguished medical man but a conscientious student, a faithful councillor of the town in which he lived, an educationalist, a ready speaker, and a progressive worker in all life's departments. He was also keen on games and one of the truest of friends, so that it was little wonder that he was beloved by the people as well as by those of his own family. He was a devotedly religious man, and it was that which gave such tone, quality, living power and usefulness to his life. The influence which the lives of good men, the bishop said, had on their fellows was always striking, and he concluded by asking the congregation to let a life of dedication and consideration mark their every thought, word, and deed. The window represents the crucified Saviour, with the emblems of the Passion on shields in the background. In the two side lights are the prophets David and Isaiah, with types of Christ (Melchizedek, Moses, Isaac, and Abel) in the upper parts. At the foot of the cross are the Virgin and St. John, with St. Mary Magdalene kneeling. On the left side are St. John the Baptist, the patron saint of the church, St. Luke the beloved physician, St. Alban protomartyr of England, and St. Felix; on the right side are St. Edmund, St. George, St. Augustine, and Botolph. In three cinquefoils above the window are the Holy Spirit, in the centre and on either side the pelican feeding its young with its own blood, and the Agnus Dei.

## THE NEW INFIRMARY AT BRADFORD.

ALTHOUGH it is barely twelve months since it was first publicly announced that some steps must be taken to provide Bradford with a new infirmary, very satisfactory progress has been made towards the realization of a comprehensive scheme. During the latter part of his Lord Mayoralty, Mr. James Hill succeeded in raising £58,392 towards a building fund, and his successor in office, Mr. Alderman William Land, has taken up his mantle and is showing a keen interest in the project. The political situation has rendered it impossible to make much progress during the past three months, but in spite of this obstacle the fund now stands at £64,000. The workpeople are supporting the movement with great enthusiasm, and are ambitious to raise a handsome contribution, an ambition which bids fair to be realized. A visit from Sir Henry Burdett gave the committee an opportunity of obtaining much valuable advice, and he indicated on broad lines the more essential points of the policy he considered the best to be pursued. At the outset of the movement some difficulty was experienced in making an effective appeal for funds on account of the absence of any definite pronouncement regarding a site. It was recognized from the first that the acquisition of a suitable site would do more than anything else to stimulate public interest. Yorkshiremen are proverbially "canny," and hesitate to lend their support to any scheme in which the important details are not definitely provided for. It appears, however, that the anxieties of the committee in this direction are now at an end, as they have accepted an offer of an estate from the executors of the late Mr. Isaac Smith; this action was confirmed by the board of management at its meeting on January 26th. As an infirmary site it probably ranks as one of the best in this country. It consists of 23 acres, surrounded by plantations and a substantial stone wall, with entrance lodge and good approach. It stands 600 feet above sea level, and is sheltered by high ground and the

Yorkshire hills to the north. It has a south aspect overlooking Bradford, and is to the windward of the city throughout the greater part of the year. It is two miles from the town hall, and the tram terminus is close to the entrance gate. The offer also includes the first refusal of an additional 6 acres on the west. The ground is sufficiently level to be well adapted for building purposes. The committee are desirous of raising at least £100,000 before commencing any building operations. It is to be hoped that they will not rest content with a sum sufficient only for "bricks and mortar." Bradford has now the opportunity of founding a modern infirmary, which should rank second to none of the great provincial hospitals, but to achieve that proud position the new infirmary must be endowed and equipped with every advantage which modern science and modern administration only can provide. To make such provision a much larger sum will be required, and it is therefore essential for success that having once put their hand to the plough the committee should carry the scheme through to a completely successful conclusion.

## "MEDICAL BUTCHERS."

THE minister of religion preaches charity to all men, and, in particular, he generally expresses appreciation of the work of doctors and the self-sacrificing spirit in which it is done. And indeed he has special reason to do so, as of all classes of patients there is none, not excluding those treated at hospitals, to whom the doctor renders more gratuitous service than the clergy. Many of them claim it almost as a right; all but very few accept it as a gift, without thinking it necessary to make any show of reluctance. Of course there are ministers of religion, ordained or self-constituted, who think they have a gift of spiritual healing. A little time ago we heard much of their "cures," but already, even in America, the native soil of most of these superstitions, such influence as these earnest and well-meaning but mistaken enthusiasts ever had is on the wane. Neither faith nor prayer has availed to stay the fatal march of true cancer, nor as far as we know have they been more efficacious in other cases of organic disease. As to the various drugs for cancer from the use of which brilliant results have from time to time been reported in our columns by various practitioners, we have waited to hear something further of the cases, but in vain. Looking at the ever-running river of remedies which goes steadily past our eyes into oblivion, we are tempted to say, with the countryman in *Horace* who waited for the passing of the river:

> At ille
> Labitur et labetur in omne volubilis aevum.

The knife still remains the best hope of the unfortunate sufferer from cancer. None can regret more keenly than we do the general futility of the other methods of dealing with this terrible disease that have hitherto been tried. We can only say, "'Tis true, 'tis pity, and pity 'tis, 'tis true." But the cancer problem is not likely to be elucidated by abuse of the surgeon. We know nothing of the Rev. A. M. Mitchell, the Vicar of Burtonwood, and we have never had the privilege of seeing his parish magazine. But if he is correctly quoted in that sympathetic organ the *Star*, the reverend gentleman would seem to be somewhat wanting in the virtue of charity towards all men which he doubtless preaches from his pulpit. The following may be taken as a specimen of his style of eloquence: "The diagnosis which leads to a verdict of cancer generally places the unhappy sufferer in the hands of the operating surgeon or consigns him to the hospital shambles as valuable clinical material for medical butchers with their attendant hooligans. Doomed to a tragic death the cancerous patient of worldly substance is nevertheless buoyed up with false hopes of recovery, misled by the plausible assurances of those whose pecuniary interests are represented by the knife; the cancerous ones yield themselves willing or unwilling victims, and are led as lambs to the slaughter—the shambles of the operating theatre. The same medical fairy tale is invariably rehearsed after each operation, until the persecuted victim, worn to skin and bone through sheer exhaustion, slips away into the unseen. High fees are paid, although the surgeons, in their heart of hearts, know the futility of numberless operations which they perform." We do not know whether the philanthropic divine is here merely delivering a message which he feels inspired to give his parishioners or whether any particular circumstance has moved him to this remarkable outburst. From the fact that he goes on to say that "vaccination and cancer may probably stand to each other in the relation of cause and effect" it may be inferred that the Vicar of Burtonwood is one of that common class of men who talk of what they do not understand. We do not complain of his denunciations, for cursing comes natural to the ecclesiastic. Argument with such a person would be merely a profanation of our "own gained knowledge." The "medical butchers" will only laugh at Mr. Mitchell's tub-thumping.

## CALCIUM IN THE TREATMENT OF EPILEPSY.

IN a recently issued number of *Epilepsia*[1]—an international quarterly review devoted to the pathological, therapeutic, social, and forensic aspects of epilepsy and kindred nervous diseases, Professor Julius Donath of Budapest gives an account of the investigations which led to the use of calcium salts in epilepsy, and of the results observed by himself from their use. Sabbatani[2] showed that calcium salts lowered whilst sodium oxalate heightened the excitability of the cerebral cortex, and also that epileptic states induced by sodium citrate could be reduced by calcium chloride. From these facts he drew the conclusion that the calcium normally present in the cortex exercises a constant inhibitory influence, and that its removal or diminution may bring about convulsive phenomena. Roncoroni,[3] by faradic stimulation of the exposed sensory motor zone in dogs, with and without the application of isotonic solutions of calcium salts, demonstrated the inhibitory effect of calcium salts and the opposite effect of neutral sodium phosphates, a precipitator, like sodium oxalate, of calcium salts in solution. Earlier than Roncoroni, however, both Cavazzani[4] and Stefani[5] had proved this antagonistic relation between calcium salts and the oxalates of either sodium or potassium in frog-muscle preparations. These results led to the hypothesis that in epileptics the presumed heightened excitability of the cortex was determined by a deficient supply of calcium to the brain by the blood, and, in view of the well-known relations subsisting between calcium and blood-clotting, to observations upon the coagulation-times of the blood of epileptics. The results were conflicting; Besta[6] found not only diminished coagulability in 37 out of 45 epileptics, but also that the amount of such diminution in each case was in direct proportion to the frequency of the epileptic attacks. Perugia,[7] no supporter of the calcium treatment of epilepsy, found in every one of 36 cases of epilepsy in the

[1] *Epilepsia. Der Wert des Chlorcalciums in der Behandlung der Epilepsie.* By Dr. Julius Donath. London: Williams and Norgate.
[2] L. Sabbatani, *Riv. sper. di Fren.*, vol. xxvii, fasc. 3, 4.
[3] L. Roncoroni, ibid, vol. xxx, fasc. 1.
[4] Cavazzani, *Rif. Medic.*, June, 1892.
[5] U. Stefani, *Riv. sper. di Fren.*, vol. xix.
[6] C. Besta, *Rif. Medic.*, 1906, No. 43.
[7] Perugia, *Il Morgagni*, October, 1908.

asylum at Venice a lowered coagulability, which could be raised to normal by the exhibition of calcium salts. Dr. John Turner, on the other hand, is stated in Dr. Aldren Turner's work on epilepsy[8] to have found an increased tendency to blood coagulation in epileptics, and that this tendency was most marked just before, during, and shortly after the seizures. Since the publication of this work Dr. Turner has modified his views in so far as he affirmed a special tendency to clotting in epileptics' blood apart from those periods when they are under the influence of fits; but he maintains, after many thousands of observations, that shortly before and during the fits the average rate of coagulation is quickened, although in some cases, after the fits, it may be retarded. According to the theory which Dr. Turner supports the immediate cause of epileptic fits is local stasis in cortical areas due to thrombosis, so that the introduction into the blood stream of any agent which favours coagulation would be expected to increase the frequency of epileptic convulsions. As bearing directly on the matter, a few investigations, quoted by Professor Donath, may be mentioned. Silvestri[9] administered 1 to 3 grams of calcium hypophosphite a day to epileptics with very favourable results, even in cases in which bromide salts were of no avail. Quest[10] found an abnormally low calcium content in the brains of infants who had died in convulsions, and also that dogs fed upon a calcium-free diet manifested a greatly heightened electrical excitability of the peripheral nervous system, without, however, showing any heightened excitability on faradic stimulation of the cortex; subsequent analyses of the brains showed no diminution of calcium content in the test animals. Cohn,[11] on the other hand, found in the brains of infants with tetany no diminution in the calcium content, whilst Stoelzner,[12] in the same class, found the opposite condition—an increase of calcium bodies. Lastly, Risel,[13] employing the same methods as Stoelzner, arrived at opposite results, and found that the experimental use of calcium in spasmophilic children did not heighten, but, if it had an influence at all, lowered the galvanic excitability. From these discrepant results Professor Donath draws the conclusion that an altered calcium content in the brains of children with tetany is not proved. Further, on the ground of his own observations of the effect of calcium treatment, he is of the opinion that calcium plays no particular part in either epilepsy or tetany. Professor Donath's cases were 9 in number, 6 being genuine epileptics, 1 a case of traumatic epilepsy, 1 an alcoholic epileptic, and the last a hystero-epileptic. The patients were under observation on the average for 124 days, all patients being placed at first on indifferent medication—for example, sodium bicarbonate—for a period long enough to determine the usual frequency of the fits. They were then treated by increasing doses of calcium chloride, at first 3, then 6, and finally 9 grams a day. Later, the effect of bromide treatment was noted. In 2 cases small doses of calcium chloride (0.25 gram three times a day) proved to be entirely useless, and in 1 of the cases the treatment had to be discontinued owing to increasing motor unrest and excitement. Large doses had in 4 of the 8 cases in which they were given no effect at all, and in the other 4 either an uncertain or very feeble action. The sudden fall in the number of fits which occurred in all cases where bromide treatment replaced that by calcium is the most striking feature of Professor Donath's observations. Perugia in his cases also found that calcium salts excited no therapeutic action in epilepsy—at least, so far as the frequency of fits is concerned—and on the ground of his experiments on blood-clotting came to the conclusion that the diminished coagulability which he found in epileptics had no causal connexion with the fits. The whole matter is one which evidently requires further investigation.

[8] Turner, *Epilepsy*. 1907.
[9] Silvestri, *Gazetta degli Ospedali e delle Cliniche*, 1907, No. 3.
[10] Quest, *Wiener klin. Woch.*, 1906, No. 27.
[11] Cohn, *Deut. med. Woch.*, No. 48, 1907.
[12] Stoelzner, *Neur. Centralbl.*, 1908, No. 2.
[13] Risel, *Deut. med. Woch.*, 1908, No. 19.

## QUACKERY IN GERMANY

OUR German colleagues complain of the competition of quacks owing to the widespread organization called the *Naturheilkunde*, which is supported by all classes. Dr. Moritz Fuerst,[1] medical inspector of schools at Hamburg, has recently related his experiences for the encouragement and assistance of others. The school doctor, he points out, comes into confidential relation with the classes which suffer most from this pest, and he knows the teachers, who are not always altogether free from leanings towards quackery. Excellent opportunities are afforded by the parents' evenings, at which the school doctor meets the teachers, the parents, and the older pupils, and can talk to them about social and personal hygiene. At these conferences questions are put, and there is a short discussion, when the supporters of quackery may express their views; but Dr. Fuerst says that he has put the case from the medical point of view (*suaviter in modo, fortiter in re*), and, if he has not always converted his opponents, he has had better luck with his audiences, and always managed in the end to get the laugh on his side. At the general inspection he says a few words about the social danger of quackery; and if a child, when asked the name of his family doctor, named a quack, Dr. Fuerst did not hesitate to call him one, for, as he says, it would be no good calling him "an unrecognized practitioner," which may be his legal position, but would be unintelligible to children. In consequence of his plain speaking Dr. Fuerst has had to defend three actions. One was withdrawn and the others were decided in his favour; but this experience has made him more careful, and now he is able to avoid legal proceedings without diminishing the effectiveness of his attacks. In the first case the charge was that Dr. Fuerst had told a school boy, who was being treated by the plaintiff, that "he should not go to a quack." The defendant admitted that he said this, but explained that the word was a technical term and was not a slander; that it was his duty to see that the school children had proper treatment, by which the State could only mean that of a recognized practitioner; and that in speaking to the boy he was obliged to use plain language, and he had only fulfilled his duty in the interests of the boy. The court held that the description of the plaintiff as a quack was a slander, but would not convict, as the defendant had used the expression in the course of his official duty and was entitled to the protection of the law regarding officials. Moreover, no intention of insulting the plaintiff appeared either from the mode of expression or the circumstances. The complainant appealed, but the Superior Court held that the expression was not a slander, the word having two meanings—one being that of a person who is not a regularly trained physician, and the other that he unsuccessfully or ignorantly pursues the calling of a medical practitioner; in the former sense it is not slanderous and this was the sense in which it was used. It was the defendant's duty as school doctor to urge the parents to get medical treatment for their children, and this could only mean the treatment of a recognized practitioner. In the second case, the defendant had told the children not to go to

[1] *Zeitschrift fuer Schulgesundheitspflege*, 1909, xxii.

quacks, that "they would not go to a tailor if their shoes were worn out." The plaintiff said that this was disparagement with intent to injure, that the suggestion that he bungled his work was untrue, and that both disclosed professional jealousy. He asked that the defendant should be ordered not to repeat the suggestion that he, the plaintiff, was a quack, and that, in accordance with the provision of the law for preventing unfair competition, he should be permitted to carry on his business without molestation. The reference to "bungling" his work is due to the German expression translated as "quack," which is *kurpfuscher*, that is cure "bungler" or "cobbler." Reference to standard German dictionaries showed that it has always been used in the sense of an outside or unrecognized worker. According to Grimm, it first appeared in the times of the guilds, and meant a man who did not work in accordance with guild rules. Various quotations are given from German literature to show that it has often been applied in this way. The Court fully accepted this view, and held that it was not improper, nor did it necessarily imply ignorance or unskilful work, but merely that the man so described was an outsider in relation to a trade or profession. Moreover, in reply to the plaintiff's point that it was not the defendant's business to concern himself with the treatment of the children, the Court quoted the instruction to the school doctor, which read: "You shall urgently recommend that the child shall be given medical treatment," and held that medical treatment meant treatment by a recognized practitioner. Unfortunately, neither the etymological nor the legal precedents are applicable to English cases, but *mutatis mutandis* there is something to be learnt from Dr. Fuerst's experiences.

## MACHINE-MADE BREAD.

THE Prefect of Police of Paris recently, in consequence of a resolution adopted by the Health Committee of the XIXth Arrondissement, drawing attention to the alleged dangerous properties of bread made by tuberculous workmen, and pointing out the advantages of machine-made bread, instructed M. Laveran to investigate the matter. While recognizing that tubercle bacilli may be included in the dough when a tuberculous baker is employed, and sharing the desire to see bread making by machinery generally adopted, he reported[1] that virulent bacilli could not be present in the bread because he had satisfied himself that the minimum temperature reached by any part of it during baking was 100° C. The minimum time for baking was thirty minutes, and it has been proved that tubercle bacilli in moist media do not resist a temperature of 70° C. prolonged for ten minutes. Further, he considers that the number of tuberculous bakers has been exaggerated, but there are no reliable recent statistics on the subject; the work is, he considers, too hard for a man with advanced phthisis to continue it. The great objection to the present method is that it is disgustingly dirty. According to Arpin and Ammann a workman during the kneading of a batch of bread loses from 200 to 340 grams in weight, a loss mainly represented by perspiration which runs off his body and becomes in part mixed with the dough. Machines for bread-making have been long known in London, but they have not come into general use, partly no doubt on account of the opposition of the workmen who dread diminution of employment, and partly from the prejudice of the public. Whether this exists as much in England as in France we do not know, but the article from which we are quoting says that a French baker who had started a machine was asked to advertise the fact on the outside of his shop, but replied, "I should be very sorry to do so, for if I did I should lose all my custom; I had the machine brought in during the night, so that no one in the neighbourhood should know about it." At the present time there is in Paris an exhibition of the milling and baking trades, and no less than thirteen different models of bread-making machines are shown; all are said to make bread as good as that made by hand, and that they are coming into favour seems to be proved by the fact that, whereas in 1906 there were only 12 in 2,000 bakeries, at the present time there are 200, and they have been introduced into the French military bakeries. The introduction of electricity has overcome the difficulties caused by the necessities of installing machinery in places where space is limited and absence of noise essential. The need for reform is hardly less urgent in England as in France, and the advent of machine-made bread is much to be desired. It is a matter for surprise that this reform should be so long delayed, as the hygienic conditions of bakers has been long known to be unsatisfactory.

[1] *La semaine médicale*, No. 2, 1910.

## ASYMMETRY.

IN an inaugural dissertation, delivered ten years ago, Dr. Gaupp treated the subject of inequality of the bones of the extremities, and he has written also upon right and left-handedness, so that we may assume that he has given serious study to the subject of the normal asymmetries of the human body,[1] with regard to which he has brought together in a small volume a summary of most of what others have written and of his own conclusions. At least as long ago as 1780 the theory of dualism was propounded, and it has again been revived by van Biervliet in his *L'Homme droit et l'homme gauche*. Although it may be possible to divide the ovum of the frog or sea-urchin in its two-celled stage into two independent organisms, this fact has little bearing on the organization of so highly developed a vertebrate as man. That there is what may be called a "physiological scoliosis" is now established by many observations, but this scoliosis is not found in young children, and does not make its appearance until school life begins. In adults the deformity takes various forms, the commonest being (as in pathological scoliosis) a curve convex to the right in the dorsal region. Children, on the other hand, are more subject to deformity in the opposite direction. It is impossible to say to what extent asymmetry of limbs, scoliosis, etc., is caused by embryonal tendencies and how much by environment. Asymmetry appears to be the rule in quadrupeds, although it is more irregular than in men, in whom, as is well known, the left lower limb and the right upper limb are most often longer than their fellows. Dr. Gaupp reproduces some very interesting diagrams of "ring-wandering" in snow or fog on perfectly level surfaces, such as frozen lakes, etc. In the case of men the rings are described with the sun, thus showing the influence of the longer and stronger left leg. In the case of a horse quoted by Dr. Gaupp the circles were described in the opposite direction. A hunted hare, also, whose course was carefully traced, described nearly four circles, always against the sun, before being killed. These observations on quadrupeds are obviously too few to afford grounds for drawing any conclusion as to the commonest direction of the circles, and it seems probable, seeing how irregular the arrangement of asymmetry is in them,

[1] *Sammlung anatomischer und physiologischer Vorträge und Aufsätze.* Herausgegeben von Professor Dr. E. Gaupp und Professor Dr. W. Negel. Heft 4. *Die Normalen Asymmetrien des Menschlichen Körpers.* Von Professor Dr. E. Gaupp, Freiburg in Breslau. Jena: Gustav Fischer. 1909. (Sup. roy. 8vo, pp. 59, 8 textfiguren. M.1.50.)

that repeated experiments would show an indifference as to direction. It is not only in the limbs that asymmetry is common—it is manifest in all the twin organs and parts of the human body, and the unpaired organs are none of them situated centrally. These considerations have led Dr. Gaupp to write that "normal man is asymmetrically built." As to right-handedness, Dr. Gaupp concludes that it originates in an inequality of the two sides of the brain, although it is doubtless increased by use, and that the division of labour thus established renders possible a greater capability of both hands, to which mankind owes so much. For this conclusion there is much to be said.

## POST OFFICE PURITANISM.

THE British public should be grateful to the Post Office for the tender care of its morals taken by that department. A week or two ago a copy of the *Journal Médical de Bruxelles*, addressed to us in the ordinary course of journalistic exchange, was not delivered. The reason given was that it contained an indecent illustration! We have since received under cover of a registered envelope a copy of the journal and illustration in question. The illustration which excited such horror in the chaste breasts of the officials at St. Martin le Grand turns out to be a coloured plate accompanying the description of a case of congenital vulvar anus in a woman aged 30. It is of purely scientific interest, and is altogether unlikely, we should have thought, to excite the pruriency even of the most elderly debauchee or to offend the austere virtue of a halfpenny journalist. The Post Office has not always been so active a guardian of morals. In the JOURNAL of December 19th, 1908, we had occasion to call attention to a circular containing coloured illustrations of a highly offensive character, which had been allowed to be distributed in open covers. The excuse of the Post Office then was that the circular would not have been delivered if its character had been observed. The Postmaster-General added that instructions had been given that a watch should be kept in case any circulars of the same description were received. It would appear that these instructions have been carried out in a very literal manner. But we take the liberty of suggesting to the Post Office that it should learn to discriminate between suggestive advertisements and illustrated reports of surgical cases intended solely for members of the medical profession. Perhaps it would be well to assign the censorship of medical journals to officials of wider knowledge and experience than those entrusted with the duty at present.

A SPECIAL general meeting of the Fellows of the Royal Society of Medicine will be held on Wednesday next, at 5 p.m., to consider, among other matters, a resolution of the council altering the by-laws so as to provide that women shall be eligible for the fellowship of the society.

THE Second Conference on Cancer Investigation will be held this year in Paris from October 1st to the 5th. A number of reports on cancer in different countries will be presented. All communications relative to the congress should be addressed to Professor George Meyer, Bendlerstrasse 13, Berlin, W.

THE Senate of the University of London has adopted regulations for the degree of Master of Surgery, constituting dental surgery a second branch in which the degree may be taken; the examination will be open only to those who have taken the degree of M.B. and B.S. in the university.

THE University of Edinburgh has made a new departure in appointing a separate examiner, Dr. Dawson Turner, to examine in medical physics. Hitherto one examiner has been appointed to examine in experimental physics for degrees in arts, science, and medicine. It does not follow that, because a man is well qualified to examine for degrees in arts and science, he should also be the best qualified to examine medical students in physics, and the policy of specializing the preliminary scientific subjects in the direction of future medical studies has no doubt led to this step.

THE third Laryngo-Rhinological Congress will be held at Berlin in 1911. The Laryngological Society of Berlin, at its general meeting held on January 14th, expressed its satisfaction at the choice of a place of meeting. The entire board of the society constituted itself an executive committee, and for the purposes of the Congress will co-opt well-known laryngologists in different parts of Germany. The Congress will take place at the end of August or the beginning of September. All communications should be addressed to the Secretary of the Executive Committee, Professor Rosenberg, 26, Schiffbauerdamm, Berlin, N.W.6, or to Dr. Finder, 17, Nettelbeckstr., Berlin W. 62, Secretary to the International Committee.

IN the BRITISH MEDICAL JOURNAL of March 6th, 1909, there appeared a paragraph headed "Medical Men and Legacies from Patients," based on a report of an action brought by Major Gerald Thomas Rawnsley, R.A.M.C., against Dr. Dunn and Mr. Lewin, a solicitor, published in the *Times* of February 25th, 26th, and 27th, 1909. Arising out of that paragraph an action for libel was brought by Major Rawnsley against the British Medical Association and the Editor of the JOURNAL. Under legal advice a note stating that it had not been intended to make any reflection whatever on Major Rawnsley, and expressing regret that such a construction should have been put upon the paragraph, was published in the JOURNAL of March 20th, 1909. A writ was issued by Major Rawnsley's solicitors on March 24th. On the advice of the legal advisers of the Association, a sum of £100 was paid into court. The case was tried in the High Court of Justice on Monday, January 24th, before the Lord Chief Justice of England, and a verdict was given for the plaintiff, the damages being entered at £750.

## GENERAL ELECTION.

THE following is a list of medical members whose elections have been announced up to January 26th, 1910:

*England.*

Dr. Christopher Addison (L.), Hoxton.
*Sir William J. Collins (L.), St. Pancras West.
Mr. C. H. Dixon (U.), Boston.
*The Right Hon. Sir Walter Foster (L.), Ilkeston.
Dr. Alfred Hillier (U.), Hertfordshire North or Hitchin.
*Sir G. H. Pollard (L.), Eccles.
*Sir R. J. Price (L.), East Norfolk.
*Sir G. Scott Robertson, K.C.S.I. (L.), Central Bradford.

*Scotland.*

Dr. W. A. Chapple (L.), Stirlingshire.
*Dr. A. R. Rainy (L.), Kilmarnock District.

*Ireland.*

*Mr. J. Dillon (N.), Mayo East.
*Mr. A. Lynch (N.), West Clare.
Dr. C. O'Neill (N.), S. Armagh.

*Members of last Parliament.

## SCIENCE NOTES.

The wonderful progress that has been made in almost every branch of scientific inquiry has caused the nineteenth century to be designated by various terms, such as "the age of steam," "the age of electricity," and so forth. Perhaps no attribute is so applicable as that of "the age of scientific experiment." The dominating feature of all scientific work has almost necessarily been the attempt to imitate natural processes by carefully conducted experiments, and thus investigate these processes in their minutest details. Experimentation of this kind is undoubtedly a product of the nineteenth century, and it is to this, to a large extent, that we owe the enormous advances that have been made. We are not unmindful of the few great experimental observers of previous centuries; but these were men far ahead of their time, isolated indications of the trend which scientific work was to take in the years to come. The first half of the century was characterized mainly by mechanical and physical investigations; but the advent of Darwin and his co-workers initiated that extraordinary outburst of activity in the bio-medical sciences that has lasted till this day. At first sight there did not seem much hope of attaining the same exact results as in the case of the physical sciences, but with the lapse of time it is found that the probable error can be reduced to a greater and greater extent. It is in this hope and with this intention that within comparatively recent years a new branch of biology has been instituted with the distinctive title Experimental Biology. Many famous names are associated with this work—Bateson, O. Hertwig, Arnold Lang, De Vries, T. H. Morgan, and Loeb, to mention only a few of the living representatives of the school. Albeit such work is in little more than its initial stage, many important and remarkable results have already been obtained. Dr. Hans Przibram, himself an able worker in this department, gave an interesting summary of these last year.[1] The main objects of inquiry are the fundamental problems of biology—namely, development, regeneration, the laws of descent, vitality, and functional adaptation. One of the best known and most startling of these investigations is that of Professor Loeb, who has been able by means simply of chemical solutions to initiate segmentation and development in an unfertilized normal ovum from a sea-urchin. From this it may be concluded that the ovum contains to a large extent the elements of differentiation of the future organism. Illustrative of this, in a sense, is the fact that if the eggs of *Hydra viridis* are kept in the dark a white animal is produced. The phenomena of regeneration have attracted many observers, and it has been found that almost every class of animals possess a wonderful power of renewing parts of even highly-specialized organs of which it may have been deprived. These experiments may eventually have an important bearing on human surgery. Numerous instances of adaptation to changed environment or altered conditions of life have been experimentally demonstrated. Of those, one of the most interesting, perhaps, is the behaviour of the common hermit-crab when permanently deprived of the shell in which it has taken up its abode. Having lost what it has probably come to consider as its natural means of protection, it proceeds to clothe its soft and vulnerable body in hard calcareous plating just like that of the ordinary edible crab or lobster. From this the natural conclusion is that the hermit-crab has not lost the power of covering its abdomen with a calcareous case, but that it keeps it in abeyance, preferring the more expeditious plan of making use of some empty whelk-shell. The study of the interdependence of various organs, physiologically independent to all appearances, has attracted many observers, who have shown that a whole class of characters—for example, the sexual characters—may be substantially modified by changes induced in any one of them. The best known of these is, perhaps, the effect of castration, causing the male to lose decided masculine characteristics—for example, plumage, colours, etc. These are but a few of the applications of experimental methods in the field of biology. Practically every biological problem has been made the subject of experiment, and it remains to be seen how much further his will take us than have previous speculation and hypothesis.

A subject to which much attention has been devoted of late years has been the application of Mendel's law to human beings. The inquiry is as yet in hardly more than a preliminary stage, and, in fact, the whole subject of Mendelism is just beginning to find definite and concrete expression throughout the natural world. The practical investigation of Mendel's law is not an easy matter, involving, as it does, years of patient labour and close attention; and in the case of man the difficulties are greatly increased. We welcome, therefore, any attempt to throw light on the problem. In a recent inquiry[2] Dr. Berry Hart has brought forward some interesting facts which may serve to stimulate further research. The author refers to the structure of the human genital system, in which there are present not only the organs peculiar to the particular sex, but also rudiments of organs appertaining to the opposite sex. Thus, in the male, the prostatic utricle and the Müllerian hydatid of the testes are female in character, while in the female the epioöphoron is equivalent to the epididymis of the male. In Mendelian terms these vestiges may be regarded as recessives, while the proper organs of each sex are dominants. The genital tract thus contains dominant and recessive determinants in unequal proportion, and is, in consequence, itself an impure dominant. Under ordinary circumstances this in the next generation would give rise to a mixture of dominants, recessives, and impure dominants, but by a process of reasoning the author shows that in this case the dominant and recessive determinants must be regarded as coupled and acting as one whole. He further discusses the origin of the sexual elements, and, rejecting the germ-epithelium theory, argues in favour of the continuity of the germ cells from the first segmentation of the zygote. Following this line he comes to the conclusion that the zygote is the product of the union not merely of two simple sexual elements or gametes, but of a sex male gamete and a non-sex male gamete with a sex female gamete and a non-sex female gamete. In support of his arguments Dr. Hart refers to the structure of dermoid tumours in the ovary and testis. In none of these tumours is there ever any evidence of the presence of internal genital organs; they may assume the structure of almost a complete embryo, but always minus testes or ovaries. To the numerous views on the origin of these tumours the author adds the suggestion that they may arise from a non-sex gamete which has retained the power of development normally lost when the primitive germ cells are transformed into sexual gametes. This implies the existence of more than two gametes in the zygote, as mentioned above. According to Dr. Hart, Mendelism does not differentiate sex, but the sex determinants are coupled and present in the sex gamete, acting as Mendelian units. A continuation of this work is promised.

Moved thereto by certain stray references in the scientific literature of the eighteenth century, Dr. Kirstine Meyer made a search in the libraries of Copenhagen for any records which might confirm the surmise that Ole Römer, a Danish physicist, who lived at the beginning of that and the end of the preceding century, had devised the first thermometer. The success which rewarded the search is recorded in an inaugural dissertation given at Copenhagen last year, and in a special article contributed by the author to *Nature*.[3] In a manuscript volume entitled *Adversaria*, containing notes in Römer's handwriting, are some entries which seem to prove that somewhere about 1702 he constructed thermometers with two fixed points—the temperature of melting snow and of boiling water—and with the cubic contents of the tube divided into equal parts. As this was some six or seven years before Fahrenheit made his first thermometer, there would seem to be good grounds for looking on Römer as the father of the modern thermometer. He appears to have grasped the theoretical aspects of the problem very completely, and not only to have foreseen the practical difficulties but to have solved some of them. He appears to have chosen a tube 8 in. long with a bulb blown at one end, and to have used alcohol tinted with saffron as the fluid. By means of a drop of mercury he ascertained whether the tube was regular, and rejected

[1] *Verhandl. d. Kais.-König. zool.-botan. Gesellschaft in Wien*, 1908, pp. 171-180.

[2] *Proc. Roy. Soc. Edin.*, xxix (1909), pp. 607-618.

[3] *Nature*, vol. lxxxii, p. 296.

irregular forms; he divided the tube into four equal parts, and then determined that the scale of the thermometer should have sixty divisions (degrees) arranged in such a way as to read: "Boiling, 60; snow without cold or warmth, 7½." In concluding his instructions for making the instrument, he wrote: "When the thermometer is completed, filled, and closed, fix by means of snow or crushed ice the point of division 7½, by means of boiling the point 60." Why Römer fixed on 60 for the number to express his upper limit, the boiling point of water, is not clear; but having chosen that number, and having found it easier to divide the whole tube into four equal parts, it was natural that he should mark his other fixed point—the melting point of snow—7.5 and not, for instance, 15, because he might expect to find more uses for the thermometer above than below the freezing point. The further reason may have been that he had no knowledge of very low temperatures, lower than that of a freezing mixture, and there is some evidence that he had the temperature of a freezing mixture in mind. Apparently he afterwards fixed 8 on his scale as the freezing point, and, if a passage in Boerhaave's writings is correctly interpreted, altered his scale again, so that the freezing point was marked 32, as in the modern Fahrenheit thermometer. It is known that Fahrenheit visited Denmark and Sweden to confer with the most famous mathematicians, so that it is fairly certain that he must have met Römer and seen his original or standard thermometer, and it is very significant that in some of Fahrenheit's earliest thermometers freezing point was marked 7.5. Moreover, when Barnsdorf, the mathematical tutor to whom Fahrenheit is said to have confided his secrets, set to work to construct thermometers he put 7.5 at the freezing. The evidence, therefore, for the view that Fahrenheit derived the main principle of the thermometer—the two fixed points—from Römer is fairly conclusive. The history of the Fahrenheit scale would, according to Meyer's story, be this: Römer's original 7.5 for the freezing point was very soon changed, possibly by himself, to 8, and zero came to be identified with the temperature of a freezing mixture. For greater accuracy of observation each degree was divided into 4, giving $4 \times 8 = 32$ below the freezing point; carrying degrees on the same scale upwards it was found by experiment that the boiling point of water must be marked 212.

The idea of plants and trees possessing eyes is not a new one, but until recently no great interest had been taken in the subject. The researches of two German botanists have shown how widely prevalent such organs are. To us hitherto plants can hardly fail to have seemed dead-alive sort of creatures, eking out a monotonous existence, and having few pleasures such as we understand them. The special senses are at once the seat of all our pleasures and a distinctive mark of superiority of the animal over the vegetable kingdom. In view of the above-mentioned communications, however, it would appear that this superiority is actually not so great as we may have been led to suppose, and that trees can see and appreciate the brightness of a summer's day almost to the full as well as we can. Seefried and Haberlandt, working independently, have examined numerous species of trees and plants belonging to common families like the oak, elm, buttercup, etc., and have found in all of them on the upper surface of the leaves eye-cells, or, rather, organs of light perception, as they are more properly called. They consist of epidermal cells, of which either the outer or the inner walls are arched, and so form concentrating lenses. In addition to these simplest forms, there are many special modifications, such as conical papillae, over the outer wall. These papillae frequently assume a lenticular shape, and in other cases a lens-like structure is formed by a simple thickening of the outer epidermal wall; very many different devices, in fact, are resorted to in order to provide lenses, one of the most ingenious being a modification of some of the ordinary leaf hairs. It is obvious that these so-called eyes are somewhat primitive structures compared with that model of perfection, the vertebrate eye, but they are quite as highly organized as the structures which are dignified with the term "eyes" in some of the more lowly groups of invertebrates. In the case of the tree, however, their function is much more localized and circumscribed, but the exact extent of this function is not determined.

## MOTOR CARS FOR MEDICAL MEN.

### THE RELATIVE COST OF HORSE AND MOTOR.

THE Secretary of the De Dion Bouton (1907), Limited, has sent us the following estimate of the comparative cost of horse and motor traction for a distance of 5,000 miles a year. The secretary informs us that the figures given for horse traction are based partly on those published in the JOURNAL of May 18.h, 1907, and partly on the information he has obtained from personal experience. The estimates do not in either case, it will be observed, include the charges for coach-house and stable or motor house, nor for depreciation.

COMPARISON OF ESTIMATED COST FOR MEDICAL MEN OF HORSE AND MOTOR TRACTION (DISTANCE 5,000 MILES A YEAR).

| *Horse Traction.* | £ | s. | d. | *Motor Traction.* | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Capital Outlay: | | | | Capital Outlay: | | | |
| 2 horses at £50 ... | 100 | 0 | 0 | 8 h.p. chassis with body hood, screen, lamps, tools, etc., £275 to £325, say ... | 300 | 0 | 0 |
| 2 sets harness... ... | 20 | 0 | 0 | | | | |
| 1 brougham ... ... | 120 | 0 | 0 | | | | |
| | 240 | 0 | 0 | | | | |
| Annual Expenses: | | | | Annual Expenses: | | | |
| Coachman ... ... | 65 | 0 | 0 | Motor man ... ... | 65 | 0 | 0 |
| Livery ... ... ... | 6 | 0 | 0 | Livery ... ... ... | 6 | 0 | 0 |
| Forage and litter for two horses... ... | 78 | 0 | 0 | Petrol, 200 gallons, at 1s. 2d.... ... ... | 11 | 13 | 4 |
| Shoeing and vet. ... | 12 | 0 | 0 | Oil and grease ... | 2 | 10 | 0 |
| Repairs and tyres ... | 10 | 0 | 0 | Carriage repairs, etc. ... ... ... | 10 | 0 | 0 |
| Licence, carriage ... | 2 | 2 | 0 | Machinery repairs and replacements | 15 | 0 | 0 |
| | | | | Tyre repairs and replacements ... ... | 20 | 0 | 0 |
| | | | | Licence, carriage ... | 2 | 2 | 0 |
| | | | | Licence, two driving | 0 | 10 | 0 |
| | 173 | 2 | 0 | | 132 | 15 | 4 |

### THE DUST QUESTION.

In a lecture on the "Mechanics of Dust," delivered recently before the Society of Engineers, Mr. C H. W. Biggs said that in all scientific attempts to abolish the dust nuisance the aim must be to avoid the presence on public roads of matter so small in bulk or light in weight as to be capable of being moved either by wind or by the draught set up by the passage of rapidly moving vehicles. The problem, in short, was how to secure that the matter known as dust should always be collected into masses too large and heavy to be distributed in the atmosphere. The use of water carts had this effect, but the action of water was very temporary, and if water carts were so constantly used as to keep down dust, the expense entailed was very large. A considerable number of adhesive materials had been tried as a substitute for water, but up to the present none had been discovered which proved more than a temporary palliative. The ideal material would be an agglutinative which, once incorporated with the road surface, continued to act until that road surface had to be replaced by a new one.

### THAMES CARS.

In an account of the Thames Car published at page 1559 of the issue for November 27th, 1909, it was mentioned that an ordinary Thames car chosen out of stock had established a record at Brooklands for 50, 100, and 150 miles. This was in November, 1907. We are informed that last November a corresponding car has established a further record by travelling 261 miles in three hours, which is some 50 miles further than the highest previous record. The driver on the first occasion was Mr. Clifford Earp; on the second Mr. C. L. Smith.

### MOTOR CYCLE.

H. K. asks for advice as to the choice of a motor cycle which would have sufficient power to take a side car on ordinary country roads. The inquirer would object to a machine which required him to start it by running alongside and jumping on when in motion.

### SPARKING PLUGS.

DR. H. W. S. WILLIAMS, of Castle Hill, Holywell, North Wales, is anxious to get into communication again with a person who travels in sparking plugs. The traveller appears to have pointed out to our correspondent that the pole in the plug he had to sell was of different metal to the remainder of the plug, and to have added that the mica insulation was bored out of the solid. Our correspondent has since remembered that he had not previously heard of mica except in flakes. On several previous occasions we have received communications from correspondents who had reason to be dissatisfied with sparking plugs sold by travelling agents. It would seem to be preferable to deal with established firms known in this country.

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THE fifteenth International Congress of Hygiene and Demography, which was fixed for the end of September this year, has been postponed to 1911.

# Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

### DUBLIN PRIZE IN MELBOURNE UNIVERSITY.

AT a meeting of the Melbourne University Council on December 6th, 1909, Dr. Leeper, on behalf of the Vice-Chancellor of the University, proposed a new statute providing for the foundation in the University of Melbourne of a prize, to be called "The Dublin Prize," and at the same time handed to the registrar a sum of £260, which had been subscribed by a number of former members of the University of Dublin, resident in Victoria, for the purpose of commemorating locally the tercentenary of the founding of Dublin University in 1591. The statute provided that this money should be applied to endow an annual prize in the University of Melbourne, to be awarded to that student or ex-student of the university who had, during the preceding year, made, in the opinion of the Professorial Board, the most important original contribution to literature or science or art.

### AWARD OF THE ROYAL HUMANE SOCIETY MEDAL TO A MEDICAL MAN.

At a meeting of the Council of the Royal College of Surgeons in Ireland, held on January 20th, the President, at the request of the Royal Humane Society, presented Dr. Alfred Sheridan, a licentiate of the college, with the bronze medal of the society for saving life from drowning. The report of the event, received from Captain M'Combie, the Irish representative of the Royal Humane Society, stated that on August 24th, 1909, at 2 p.m., Mr. John J. O'Neill was bathing in the sea near Westport, co. Mayo, when he became exhausted and sank. Some children who were looking on became frightened and gave the alarm, bringing to the beach Dr. Sheridan, but the children could only vaguely indicate where Mr. O'Neill had sunk. Dr. Sheridan had to locate him by diving, and found him floating away on the tide, midway between the surface of the water and the bottom. With some difficulty Dr. Sheridan brought him ashore, and after about an hour's work had him out of danger. Dr. Sheridan is the sixth licentiate of the Irish College of Surgeons who has within the last few years received the recognition of the Royal Humane Society for saving life from drowning.

### WOMEN'S NATIONAL HEALTH ASSOCIATION.

The annual report of the Tullamore Branch of the Women's National Health Association shows that a vigorous "health campaign" has been conducted during the past year. By means of leaflets the people in the district have been made acquainted with the importance of sunshine and fresh air, and have been instructed in the methods of home treatment of tuberculosis. The report also refers to the charge which has been brought against the national health campaign, that it is injuring the country's industry and trade, and points out that the assertion is unsupported by any facts or figures that will stand the test of investigation. Many Irish doctors can testify to the improved hygienic habits adopted by the people as a result of the exertions of the National Health Association, and to the general interest displayed in the information that it disseminates.

### MEDICAL OFFICERS TO SKIBBEREEN UNION.

A special meeting of the Skibbereen Board of Guardians was called on January 19th to consider the appointments to the vacancies caused by the death of Dr. Jennings, who had held the position of medical officer for Skibbereen Dispensary District, and also medical officer of the union. Dr. O'Meara, the senior medical officer and consulting sanitary officer in the Skibbereen union, was anxious to be appointed to the position of medical officer to the workhouse hospital, but as it would have entailed a rearrangement of the dispensary districts, the board did not see its way to make the special appointment, consequently Dr. O'Meara applied for the Skibbereen Dispensary District which carried this hospital appointment with it. At the last moment, however, Dr. O'Meara resigned, and in consequence Dr. Burke, who is much respected in the Leap District, was unanimously elected to the Skibbereen Dispensary District. As regards the hospital appointment, a consultation was held, and it was unanimously decided that Dr. O'Meara and Dr. Burke be conjointly appointed medical officers of the workhouse—the former to have £50 a year and the latter £30 a year with proportionate increments; the former as being longest in the service of the board to be styled senior medical officer, but the latter is to have equal rights and privileges with the former, each to help the other free of charge in all consultations and operations, subject to the sanction of the Local Government Board and any alteration which the proposed amalgamation of unions may entail.

# Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

### EDINBURGH AND LEITH MEDICAL PRACTITIONERS' ASSOCIATION.

ON the question of a new charitable staffed hospital for women in Edinburgh, or a nursing home where patients can be received at rates from 10s. a week, the Edinburgh and Leith Medical Practitioners' Association is taking a vote of its members. At a recent meeting of the association two motions were submitted, first:

> That this association does not approve of the institution of a new charitable staffed hospital for women in Edinburgh;

and the second:

> That there is a felt want in Edinburgh for an enlarged nursing home, conducted on the same lines as the nursing homes are at present conducted, but admitting patients at lower rates—that is, from 10s. per week upwards.

The fifth general meeting of the association will be held in the Hall of the Royal College of Physicians, 9, Queen Street, on Saturday, January 29th, at 8.15 p.m., when a discussion on "Milk Supply," opened by Dr. John Robertson, B.Sc., Medical Officer of Health for Birmingham, will take place.

### STUDENTS' CONFERENCE AND THE MEDICAL CURRICULUM.

Among other subjects engaging the attention of the Conference of Students' Representative Councils of the Four Scottish Universities at its meeting in Glasgow, the medical curriculum was under discussion. Mr. Brash, Edinburgh, moved: "That this conference is of opinion that the medical curriculum should be of six years' duration." He quoted returns to show that the average time of study was seven years, and that only 14 per cent. of students graduated in the minimum five years. Of these, most extended their study by a year's hospital appointment without emolument. There would thus be no hardship in the extension to six years, as five was "totally inadequate to produce an efficient scientific modern medical practitioner." It was argued, however, that the medical course was to produce physicians, not scientists, and that the drain on the time and resources of students was already sufficient. The motion was finally defeated by nine votes to two, the Arts delegates abstaining from voting.

### ROYAL SOCIETY OF EDINBURGH.

At a meeting of the Royal Society of Edinburgh, on January 24th, Professor Cossar Ewart, F.R.S., Vice-President, in the chair, Professor D. Noel Paton read a communication by Dr. Williamina Abel, on the development of the autonomic nervous mechanism of the alimentary canal of the bird. A nervous mechanism existed in the wall of the stomach and intestine which controlled their movements. The investigation undertaken by Dr. Abel was to determine the question whether this mechanism was developed *in situ*, or was an outgrowth from the central nervous system. It was

shown by a series of lantern slides, prepared from specimens, that the mechanism was an outgrowth from the central nervous system, and that therefore its independent action must develop secondarily.

EDINBURGH ROYAL INFIRMARY.

At the weekly meeting of the managers on Monday, January 24th, Mr. E. Scott Carmichael, M.B., F.R.C.S.E., was appointed an assistant surgeon. There were six candidates. Hugh Paterson, M.B., Ch.B., was appointed clinical assistant to Dr. N. T. Brewis for the period from now till March 31st, 1910. It was agreed to minute that the term of office of Dr. William Guy as dental surgeon to the infirmary having expired, the managers desired to record their high satisfaction at the manner in which he had discharged his duties during the fifteen years he had held the appointment. In token of their appreciation of Dr. Guy's services the managers unanimously agreed to appoint him consulting dental surgeon to the Royal Infirmary.

GLASGOW COMMITTEE OF RED CROSS SOCIETY.

At a meeting of the Glasgow Committee of the Scottish Branch British Red Cross Society, held on January 21st, the Lord Provost presiding, Dr. R. T. Halliday, the honorary secretary, read the correspondence, the chief item being a copy of a resolution from the Territorial Force County Association in the following terms:

> It was resolved to delegate to the British Red Cross Society the organization of voluntary aid detachments in the county for the Territorial Force in time of war, and to ask the society if they would be willing to undertake this work.

Sir George T. Beatson explained that while the Territorial Force Medical Service supplied the field units and the base hospitals, there existed at present no connecting link between these in the form of clearing hospitals and personnel for the lines of communication. The provision of these in the shape of voluntary aid detachments would give the country an opportunity of helping in a very useful work and a necessary part of the national defence. Sir George moved that the request of the County Association be agreed to, and this became the finding of the meeting. It was also decided to co-opt seven members of the County Association on the Red Cross Committee. The work of organization will then be undertaken by the committee.

GLASGOW AND THE PREVENTION OF PHTHISIS

At the annual social meeting of the Ladies' Auxiliary of the Glasgow and District Branch of the National Association for the Prevention of Consumption, a large and representative gathering, including the Lord Provost, the Bishop of Glasgow, and the Dean of Guild, attended in the City Chambers. Dr. Philip, Physician to the Royal Victoria Hospital for Consumptives, Edinburgh, gave an address on the problem of tuberculosis, emphasizing the fact that it was essentially a disease of communities. While legislation regarding dwellings, workplaces and lodging-houses, and other health enactments had all been of incalculable service, the great difficulty was to graft our present more enlightened ideas on to the previously existing conditions. We had to face the results of the earlier and ill-formed civilization. The problem of to-day was a much greater one than the curing of tuberculous individuals. It was to limit the spread of an infectious disease, and finally eradicate it. It meant a comprehensive programme of organized and concentrated effort. Co-ordination of activity was essential. In proportion as we attained a clear conception of the nature and extent of the issue, our efforts would become direct and effective. With concentration of effort, proper organization, and harmonious co-ordination of measures, the end would be assured.

AIR PURIFICATION IN GLASGOW.

In furtherance of the movement, which has already been reported, for the purification of the atmosphere of Glasgow, the Gas Committee of the Corporation has appointed a special subcommittee to make arrangements for the delivery of a course of lectures on the advantages of gas for cooking and heating purposes. This committee has agreed that at various public halls throughout the city a course of ten lectures will be delivered, when the practical advantages of the most up-to-date appliances will be demonstrated.

GLASGOW HOSPITAL SUNDAY FUND.

The Executive Committee has received towards this fund the sum of £4,248 from the collections in the various city churches, although a further amount has not yet reached the treasurer's hands. The claims on the infirmaries have this year been exceptionally heavy, and it was decided to keep the books open till February 15th, in order to have the full amount received till that date included in the annual report for 1909.

# England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

## LONDON.

SCHOOL CHILDREN.

THE report of the Medical Officer (Education) for the twenty-one months ended December 31st, 1908, to the Education Committee of the London County Council was issued some time ago, and is now published as an appendix to the report of the medical officer to the County Council. Previous reports of the Medical Officer (Education) have been made for the year ending March 31st, 1908; the change to December 31st has been made to accord with the regulations of the Board of Education, and to bring London into line with the rest of the country and with the sanitary authorities, whose reports are made up to the end of the calendar year.

Dr. Kerr points out that the period of twenty-one months covered by this report was marked by great activity in all matters concerning school hygiene and physical care of children. With most of the discussions and decisions concerning these subjects and the administrative work of the education authority in relation to them readers of the BRITISH MEDICAL JOURNAL are already acquainted, as they have been reported from time to time as the matters were considered by the Education Committee of the County Council.

*General Observations.*

In some preliminary paragraphs Dr. Kerr deals with some general legislative and administrative questions. He says:

> The doctrines which guide our work, and, indeed, all educational work, must be sharply realized, clearly defined, and understood, otherwise a labyrinth of legislative enactments or a tangle of overlapping authorities will cause trouble and confusion in the future. During the plastic period of development of the nervous system each individual acquires a stock of experiences of value during the rest of life. The information and knowledge derived through reading, writing, and the other conventions of civilized life form an addendum to the great mass of experience accumulated by the mere process of living, and it is this addendum of a formal or artificial nature which it is to the common interest to impart to each individual, if necessary, at the cost of the State. During this plastic period, which in England is mainly the first sixteen years of life, the desires and needs of the growing organism of the child are essentially different from those of the adult, and must always be separately considered and have special provision. The whole State provision for aiding the growth and development of the child from the time it ceases to be entirely dependent upon its parents until it attains puberty—a period roughly embraced between 3 and 16 years of age—now constitutes this formal education. The only scientific doctrine to follow as a guide for legislation is that any public supervision of, or provision for, the growth and development, that is, the general care of children should be under the control of the education authority. The recognition of this unifying principle will simplify laws and avoid endless overlapping and complications in practice. Any attempt to separate duties or functions by artificial definitions is bound to result in enhanced cost of working, unnecessary friction, duplication and possibly even actual failure. Hitherto in our work it has, for practical purposes, been attempted "to render unto Caesar the things that are Caesar's," by regarding all that concerns the child in school as under the control of the education authority, and all that concerns it beyond the school as being under the control of other (local) authorities, but in practice there is often lack of

co-ordination, and sometimes differences of standard, which occasionally give rise to results that are most grievous. In regard to cleanliness of the person, any efforts to fully effect this throughout the schools have been frustrated in many part of the metropolis by lack of provisions for effecting cleansing. Again, for children excluded from school as suspicious, during the prevalence of diphtheria, several sanitary authorities have refused to test the conditions existing in such suspicious children in their districts, holding that this is a matter for the education authority, who from their standpoint simply exclude the children until the risk of infectiousness is deemed to be past, leaving the sanitary authority to deal as they please with suspicious cases in their own districts. Probably the majority of children refused admission to the special schools of the Council, as being for educational purposes imbecile, are later on either refused care by the guardians of the poor or transference to any suitable institution on the ground that they are not "imbecile." The question of the care of idiots and imbeciles forms a very good instance of confusion. There is no authority having the statutory duty of caring for imbecile or idiot children who are not paupers. The poorer classes have no institutions open to them except those under the Poor Law. A child excluded from the special schools as imbecile by the educational officers is generally refused help by the guardians, but if this body accepts its care, then the parents, even if they pay the whole cost of maintenance at such an institution as Darenth, are thereby pauperized. The light shed in the last few years on the problems of ordinary education from the study in our schools of feeble-minded and partially defective children would to a large extent have been lost if these had not been under the educational authorities. The least costly and most practical solution appears to be, that any public provision for protecting and aiding growth and development of children during the years of school life—3 to 16 years of age—should be entirely committed to the education authority. This would allow such matters as the feeding, teaching, cleansing, medical treatment or social protection of school children, when these duties become a public care, to be administered by the one authority, and by bringing all the various problems into a correct relation and perspective would also effect considerable financial economy. On the other hand, transient conditions in which the child bears the same social relations as any other individual, as for instance when affected with typhoid or scarlet fever, or when guilty of a crime, would still come under the same provision by the sanitary authority or police respectively as at present. Fortunately this is the line taken by all the recent legislation in matters concerning children.

*Medical Staff.*

The medical staff at the end of 1908 numbered 52. The permanent staff consisted of the medical officer (education), 1 assistant medical officer giving whole time, 2 assistants giving half time, and 8 assistants giving quarter time—of whom 3 are women. The statutory medical inspection of elementary school children is carried out by a temporary staff of 16 school doctors, each in charge of a district, and having one or more assistant school doctors, of whom there are 24. It has been decided to increase the staff by the addition of 16 assistant school doctors in the summer and another 16 in 1910, so that ultimately there will be 72 members of this temporary staff giving quarter time. Each of the temporary staff serves for a period of three years. The school nursing staff consists of a superintendent, 2 assistants, and 51 school nurses; they undertake the oversight of personal hygiene in both elementary and secondary schools.

The duties of this staff consist of: (1) The examination of candidates for employment in schools, scholarship candidates, scholars in secondary and trade schools, and students in the pupil teachers' centres and training colleges; (2) the medical inspection of schools; (3) prophylactic measures of cleanliness and disease prevention, in co-operation with managers and care committees in respect to cleanliness and personal hygiene, and with the medical officers of health and sanitary authorities in respect of infectious and other diseases; (4) examination of children nominated by school doctors, teachers, managers, and others, for admission to special schools for the physically and mentally defective, the blind and deaf, and similar institutions, together with the periodic examination of children already in these schools.

*Routine Medical Inspection.*

In the routine medical inspection the head teachers are asked to place on a form the names of all children known to them as presenting any abnormality (except vision). The school doctor, after giving due notice, visits the school and sees the children selected by the teacher, and especially notes any cases presenting defects of hearing, brain, speech, limbs, or nutrition, and a card is left with the teacher for each child requiring treatment. The doctor then goes over the school and notes any defects in regard to the general arrangement of the building (environment, etc.); general condition of the school (window and artificial lighting, heating, ventilation, building, sanitation, desks, and seating); general condition of the children (physique, teeth, and nutrition, etc.); the hygiene of school work (hours of work, modes of work, reading, writing, drawing, manual work, recreation, exercise); and any other matters which affect the health of the teachers and children and the physiological development of the latter. Should the doctor discover any child who, in his opinion, should be medically examined with a view to being admitted to a special school, the teacher is asked to fill up and forward a nomination form to the head office. The teacher has an opportunity of discussing with the doctor any matters affecting the health of the school.

The vision of all children is tested once in twelve months, the preliminary test being applied by the teacher, who records on a form particulars as to all children in Standards I, II, III, and IV whose vision is $\frac{6}{18}$ or worse, and children in Standard V and above whose vision is $\frac{6}{12}$ or worse. When the doctor visits the school he tests the vision of the children returned as defective, and gives the teacher a red or green card (the red card signifying that the case is urgent), according to the amount of defect found, for each child who should seek advice. These cards are distributed to the children a few at a time, so as not to cause inconvenience to the hospital authorities.

In the medical register now kept at each school the doctor notes any school conditions detrimental to the health and well-being of teachers and children, and enters the name of any child presenting a condition such as discharging ears or very defective vision, for whom managers could help to obtain relief.

*Infants.*

Of the children, numbering 221, newly admitted at ages 3, 4, and 5 years, into several infant departments in Islington schools of average type examined by Mr. Cecil Rowntree, only 115 could be recorded as absolutely normal; but among those enumerated as defective were many in which the defect was very trivial, such as impetigo, or in which medical treatment could do little, as in the case of old rickets, mental defect and physical inferiority, the results of improper feeding, defective hygienic surroundings and environment which go to complete the picture of poverty, dirt, and misery. The chief single cause of defect was naso-pharyngeal disease (tonsils, adenoids, or nasal obstruction); they constituted 20 per cent. of the total number examined, and 47 per cent. of those with defect; the incidence of naso-pharyngeal conditions was 30 per cent. higher in the boys than in the girls, but the numbers dealt with were too small to warrant deductions.

*Enlarged Glands.*

A special examination of 1,500 children, 750 boys and 750 girls, in various council schools, was made by Miss A. M. Roberts with special reference to the lymphatic glands about the head and neck. The number of cases of enlarged glands among girls was more than double that among boys; this difference is attributed partly to the healthier tone from more energetic exercise among boys, and partly from the less frequent pediculous irritation of the scalp; 50 per cent. of the boys had decayed teeth with enlarged glands, but this occurred in only 13 per cent. of the girls; this is held to be evidence of the large part pediculi play in causing such irritation. The result of the inquiry was to show the extreme importance of the cleanliness which it is now being attempted to enforce in schools, and the necessity for treatment of carious teeth and of chronically enlarged tonsils, or adenoids.

*Adenoids.*

At three representative schools having 2,251 children on the rolls, 1,506 were selected for detailed examina-

tion with regard to adenoids; 822 were normal, and 164, or about 7 per cent., were in a condition suggesting the advisability of surgical operation.

*School Dust.*

From inquiries and observations in naturally and artificially ventilated schools, it is concluded that about as much dust is carried in by the air as is taken in by the children on their boots and clothing. The amount of dust collected in mechanically ventilated schools is only about one half of that found in those naturally ventilated. With regard to personal introduction, the opinion is expressed that the danger of specific contamination will be minimized by greater attention to personal cleanliness and the more extended use of baths. The habit of scraping and wiping the feet upon entry to any building is important, and the habit should for this reason be inculcated in all children, apart from the advantage which would accrue to the schools themselves. The use of wet sawdust in sweeping halls leaves nothing to be desired, and it is considered improbable that any better method could be adopted. But in those parts of classrooms which are occupied by dual desks the time allowed is insufficient for the removal of the sawdust from between and beneath the feet of the desks, which cannot be moved, so that a certain amount of dry sweeping is practically universal. The use of frequently damped brooms would probably be the best remedy, while light spraying with a garden syringe with a fine rose would be of service. With regard to disinfectants and the use of oils for floors, Dr. Kerr makes the following observations:

The specific function of disinfectants is asserted to be in connexion with infectious diseases, the zymotic fevers especially. All our inquiries here and most of the teaching of recent years go to show that out-of-school conditions are far more powerful means of disseminating these diseases, and that the school plays a comparatively secondary rôle. The infection is from the children themselves, not from doors and cupboards, desks or floors; these means are trivial; it is the undetected or mild cases or carriers continuing to attend that accounts for school spread of disease when it exists. It is little use disinfecting a school room if the clothes and persons of the infective children cannot also be disinfected. The method of searching for the infective focus and removing it must always be the chief line of resisting the spread of infective diesases. With these facts in mind, the value of routine disinfection as applied to school rooms sinks to insignificance compared with its value in such a focus as a sick room after the patient has been removed. The cost of disinfection will always be very great, and as the cost of the disinfectant is probably nine-tenths of the whole, it is obvious that as a commercial interest routine disinfection in relation to educational buildings is likely to be pushed as energetically as ventilating expedients were once urged on an ignorant public; although the value seems to be in little doubt the actual results to be obtained by routine disinfection might be worth a trial, using disinfection in one group of schools and omitting it in a control group.

Far more efficacious from the dust point of view would be the use of oils as floor dressings. In many commercial houses and banks these oils are found very useful. They appear to have been unsuccessful when tried in some elementary schools, but at the Stockwell Secondary School for the past year the use of this method has been very satisfactory. The usual routine in the hall, for instance, is 9 a.m. assembly, 9.30 to 12 10 drill, 12.40 dinner; after this it is swept; 1.30 to 2, on wet days, dancing, 2 drill. The drill mistress formerly suffered much from irritable throats, due probably to dust. This has disappeared since the floors were oiled. There is less dust now on the food and during meals, and dancing has only been practicable during the past year. The decorations of the room seem fresher than those of the adjoining school decorated at the same time. There are no complaints. Dresses are not dirtied or discoloured, and there is a considerable economy in labour. Considering the extensive use of these dust-fixing oils (Staubbindende Oele) in German schools it would be well worth trying an experiment on a considerable scale.

*(To be continued.)*

## LIVERPOOL.

LIVERPOOL MEDICAL INSTITUTION.

AT the annual meeting held on Thursday, January 20th, 1910, the following list of office bearers and members of Council was adopted: *President*, *Thomas Robert Bradshaw; *Vice-Presidents*, Robert A. Bickersteth, Richard I. Richardson, *J. E. McDougall, and *G. P. Newbolt; *Treasurer*, J. Lloyd Roberts; *General Secretary*, *Thomas Bushby; *Secretary of Ordinary Meetings*, *W. B. Warrington; *Secretary of Pathological Meetings*, *Ernest E. Glynn; *Librarian*, W. B. Paterson; *Editor of the Journal*, John Hay; *Council*, W. T. D. Allen, A. P. Hope Simpson, A. Nimmo Walker, *T. H. Bickerton, *T. C. Litler Jones, *Herbert R. Hurter, *Joseph Unsworth, *A. A. Mussen, *Richard Humphreys, *John Owen, and *J. Graham Martin; *Auditors*, *Hubert Armstrong and *W. N. Clemmey. Those marked * did not hold the same office last year.

A NEW EAST DISPENSARY.

Next to the Royal Infirmary, which was opened in the year 1749, the dispensaries are the oldest medical charity in Liverpool, having been in existence since the year 1778. The first dispensary was opened in Church Street, but was subsequently removed to Vauxhall Road while the latter was still a country lane. As the town continued to grow two more dispensaries were found to be necessary; the original in Vauxhall Road became known as the North Dispensary, that in Richmond Row is known as the East Dispensary, and that in Upper Parliament Street as the South Dispensary. The work of the two latter institutions has been carried on in buildings originally built for private dwelling-houses. For the past twenty years or so the work of the dispensaries has been done by resident medical officers, three in each. There is an indoor and an outdoor department, the sick poor being visited at their homes or attending at the dispensaries if they are able to do so. The dispensaries thus to a great extent perform the work done in other cities by the out-patient departments of hospitals, and consequently the general hospitals have not developed their out-patient departments to the same extent as their in-patient departments.

The East Dispensary, which has been at 160, Richmond Row since the year 1848, has recently been rebuilt and provided with an operating theatre and the usual appliances for general and special work. All patients attending are charged the sum of twopence, and care is taken to exclude all who are in a position to pay ordinary medical fees. In one year the income from this source at the East Dispensary alone amounted to more than £1,200. The new building was opened by Lord Derby on January 13th in the presence of a large and representative gathering.

## MANCHESTER AND DISTRICT.

COMPULSORY NOTIFICATION OF PHTHISIS AT BURNLEY.

THE health authority of the Burnley Corporation has made application to the Local Government Board for a provisional order extending the compulsory notification of phthisis for ten years. The Corporation has the power for two years under a local Act, but this period has not furnished data sufficient for the medical officer of health to depend on in advising the Corporation as to what steps are most desirable to prevent the spread of the infection. It is stated that out of 289 cases reported 116 died within a year. The Corporation has fitted up a laboratory for the free examination of sputum suspected to contain tubercle bacilli, and the Government inspector was informed that any person can call in for such examination, and by this means the authority hoped to get information of cases in the early stages when sanatorium treatment was desirable.

SMALL-POX AT HEYWOOD.

The outbreak of small-pox which has recently occurred in the Heywood district has caused considerable alarm. Seven cases, 3 being reported in one day, have been notified. All have been removed to the isolation hospital at Birtle, and the prompt measures taken ought to check further spread. So far the origin of the disease is not known. It has been reported that it arose owing to the working of infected cotton from Egypt, but there is no proof of this. The probability of such a source is suggested, of course, by reports some time ago about a similar outbreak at Stockport, where there were some grounds for the suggestion. In all the latest cases the patients work at a mill at Hopwood, near Heywood.

# New South Wales.

[*FROM OUR SPECIAL CORRESPONDENT.*]

CREMATION SOCIETY.

THE Cremation Society, at a public meeting held in November last, decided once more to urge the subject of cremation on the attention of the Government. The following resolutions were passed:

That, in view of the repeated recommendations of the Board of Health, and in view of the expressed opinions of the medical profession and municipal councils, we again respectfully urge on the Premier the necessity of placing on this year's Estimates a sum of money for the erection of a crematorium.

That it is unnecessary to await new legislation, as under the amended Health Act such regulations may be created and enforced by the Governor and Executive Council.

# Special Correspondence.

## PARIS.

*Further Researches on Transmissibility of Acute Anterior Poliomyelitis.—Retirement of Professor Huchard.—Foreign Students at the University of Paris.—Medical Degrees Conferred in 1909 in France.—Third International Congress of Physiotherapeutics.*

MM. LEVADITI AND K. LANDSTEINER at the last two meetings of the Académie des Sciences communicated the results of further researches on the transmissibility of acute anterior poliomyelitis to the chimpanzee and on the possibility of inoculating the disease to a series of the lower apes. They found that the spinal cord of animals which had died of the disease, dried *in vacuo* over sulphuric acid, preserved its virulence for at least fifteen days. They further confirmed their previous results that the virus passed with ease through the Reichel filters, and that the incubation period was of longer duration in animals which were inoculated with the filtrate. The experiments showed that the resulting infection was due to the virus, and not to a toxin in the dried cord. Rabbits inoculated in the brain and peritoneal cavity were for the most part resistant, but a few reacted. It was possible by inoculation of dried marrow to confer immunity. Emulsions made from marrows of infected animals heated for thirty minutes at 56° C. did not vaccinate animals. Microscopical examination by the usual methods did not show the presence of any micro-organism, but using the method of Loeffler as modified by Borrel, M. Levaditi noted the presence of a large number of corpuscles, round or slightly ovular, often in pairs or in groups, and deeply stained red. They were extremely small, but showed here and there some polymorphism. They were not distinctly colourable by the aniline stains, but with dilute fuchsin, applied for a long time, they stained them a pale rose, or appeared in the field as clear points, surrounded by a reddish zone. The Giemsa stain showed small round or oval points stained a very pale blue. The same methods applied to preparations made with the culture medium without cultures showed the presence of granulations, but they differed from those described above in volume and regularity.

The pupils and friends of Professor Huchard assembled on January 19th at the Necker Hospital to hear his last clinical lecture, when he retired from the active staff of the hospital on reaching the age limit. Dr. Renon and Professor Robin both spoke, and Dr. Gillet recited a poem for the occasion. Professor Huchard made an eloquent speech in reply.

Foreign students are coming to Paris in greater number than formerly, when Germany attracted the greater number. Recently published statistics show that twenty years ago (1888–9) the number of foreign students in Paris was 457; in 1898–9 the number rose to 1,174; while in 1908–9 there were no fewer than 3,326; the numbers had doubled during the last five years, having been 1,633 in 1904–5. The students came from all parts of the world: England 115, United States 107, Egypt 165, Austria 139, Germany 231, Roumania 233, while from Russia came 1,356. Some were sent with scholarships from their Governments, notably from Turkey since the change of régime, from Hungary, and from the Argentine Republic.

During the past academic year the number of medical students who obtained the State diploma of Doctor in Medicine was 936, while 3 obtained the diploma of Officier de Santé. The largest number of degrees were obtained in the Faculty of Paris, that is, 440; in Lyons 144 were granted, in Bordeaux 120, in Montpellier 99, in Toulouse 47, in Lille 32, in Nancy 29, and in Beyrouth 25. The university diploma of M.D., which does not give the right to practise on French territory, was conferred on 48—26 in Paris, 12 in Montpellier, 5 in Lyons, 4 in Nancy, and 1 in Lille. In 1904 the number of practitioners in Paris was 3,427, in 1825 it was 911; as the population then was only one quarter of the present number, it would appear that the profession was as crowded then as now.

The Third International Congress of Physiotherapeutics will be held in Paris from March 29th to April 2nd. The reporters in the following sections have been appointed: (1) Sea and Mountain. Comparative Climato-Physiology. Reporters, Dr. Huggard (Davos) and Dr. Sardou (Nice). (2) Forest Cures. Reporters, Dr. Mol (Scheveningen) and Dr. Lalesque (Arcachon). (3) Climato-Therapeutics in Disease of the Heart and Circulatory Apparatus. Reporters, Dr. G. A. Gibson (Edinburgh) and Dr. Laubry (Paris).

# Correspondence.

## RESEARCH DEFENCE SOCIETY.

SIR,—This society was founded on January 27th, 1908; we therefore hope that you will find room for an account of its work during the past twelve months. It has now about 2,800 members and 130 associates. In addition to the branches which it had a year ago, it now has branches in Birmingham, Brighton, Edinburgh, Liverpool, Newcastle, and Shrewsbury. Other branches are in course of formation in Bath, Harrogate, Oxford, Ryde, and elsewhere. In other places it has corresponding members representing the society and in touch with the central committee.

Since last January the following have consented to be Vice-Presidents of the society:

Miss Balfour.
Sir Robert Ball.
Mr. Otto Beit.
Mr. Neville Chamberlain.
The Very Rev. Wm. Delany.
The Bishop of Derry.
The Duke of Devonshire.
The Rev. T. A. Finlay.
The Rev. John Gwynn.
The Rt. Hon. Jonathan Hogg.
Viscount Iveagh.
Lord Leconfield.
Sir Henry Morris.
Miss Isabella Mulvany.
Lieutenant-Colonel Pilkington.
Lord Stanmore.
The Provost of Trinity College, Dublin.
The Archbishop of Tuam.

The Research Defence Society has now obtained a well-established position, and is becoming generally known throughout the country. There has been a great increase in the work of distributing literature, and many thousands of pamphlets have been sent out. There has also been a great increase in the number of addresses and lantern lectures given by members of the society. These addresses and lectures have been very useful, and have been well received by large audiences. We have three complete sets of lantern slides, illustrating: (1) What we owe to experiments on animals in physiology and pathology; (2) Pasteur's life and work; (3) the prevention of tropical diseases—malaria, yellow fever, Malta fever, sleeping sickness. Duplicates have been made of most of these slides, and are at the service of all members of the society. Full catalogues and notes are sent with each set of the slides.

The committee are always willing to send speakers to debates arranged by clubs, institutes, debating societies, or representative committees; but they do not feel bound to accept the "challenges" which they receive from anti-vivisection societies.

The society held a stall at the Church Congress Exhibition last October, and a lecture was given in the Exhibition Building during the congress.

Before the General Election a letter was published in the press calling the attention of all parliamentary candi-

dates to the society's work, and to the evidence already published by the Royal Commission, and reminding them that the Commission has not yet published its final report and recommendations to Government. A copy of this letter was sent to each candidate.

A circular letter has lately been sent to all the Honorary Secretaries of the Branches and Divisions of the British Medical Association, asking them to bring before the members of the Association our need of more branches and corresponding members.

Since last January the following pamphlets have been issued:

1. Experiments on animals during 1908 in Great Britain and Ireland.
2. Anaesthetics used in experiments on animals.
3. On the use of dogs in scientific experiments.
4. The value of antimeningitis serum.
5. Recent surgical progress.
6. Advance in knowledge of cancer.
7. Some thoughts on causation in health and disease.
8. Reprint of correspondence in the *Times*, December, 1908, —January, 1909.
9. Reprint of articles in the *Standard*, July 20th, 1909.

Other pamphlets are in course of publication, and a series of short popular leaflets is being prepared for more general distribution. A set of all pamphlets and leaflets lately published will be sent in due time to each member of the society.

The society's work must be slow, and cannot be judged only by the number of pamphlets distributed and lectures given. But we have abundant evidence that the society is gradually impressing on the public mind the truth about experiments on animals in this country.—We are, etc.,

CROMER,
President.
SYDNEY HOLLAND,
Chairman of Committee.
F. M. SANDWITH, M.D., F.R.C.P.,
Honorary Treasurer.
STEPHEN PAGET, F.R.C.S.,
Honorary Secretary.

London, Jan. 25th.

## GENERAL PRACTITIONERS AND POOR LAW REFORM.

SIR,—As a Poor Law medical officer I am quite in sympathy with most of the suggestions in the article published in the JOURNAL on January 22nd (p. 219). I think, too, they accord very fairly with the opinion of the greater portion of the Poor Law medical service. That this service should be a distinct one has been embodied in one of our published resolutions, and, as you point out, its amalgamation with the sanitary medical service of the country would almost certainly result in gratuitous medical attendance on all poor persons. You remark that hitherto discussion on Poor Law reform has been carried on from the standpoint either of the medical officer of health or of the district medical officer, but without reference to the interests of the general practitioner; but it must not be forgotten that the district medical officers all over England and Wales are essentially general practitioners mostly independent of their Poor Law appointments. That they are in nearly all cases in friendly association with their non-official medical neighbours, who recognize that their interests are almost identical with those of their Poor Law brethren, and who would be far more likely to trust to their views as to what was beneficial for the general practitioner, than sympathize with the views of the medical officers of health. I would make one exception here: When I say medical officers of health I allude only to whole-time officials, I do not include the numerous part-time medical officers of health. They, like district medical officers, are essentially general practitioners, and their views on Poor Law medical reform are much more likely to be in agreement with those of Poor Law medical officers than with those of the whole-time members of their own body.

There is, however, one matter alluded to in your article with which, I fear, Poor Law medical officers will not be in agreement—that is, as to the desirability of every medical practitioner being a public vaccinator or district medical officer. In other words, we are almost unanimously opposed to the destruction of these branches of the public medical services of the country. I was unaware that the British Medical Association had recommended the abolition of the post of public vaccinator, and if the carrying out to their logical issue of the decisions of the Representative Meeting would involve the abolition of the district medical officer, I earnestly hope they will not be so extended. That such a change would be good either for the poor or for the community generally is highly questionable, and I do not think would be supported by any experienced Poor Law practitioner; nor do I think that any considerable section of the general practitioners of the country desire such a change. With the increasing number of degenerates, largely fostered by modern civilization, it is quite Utopian to imagine there will be any large reduction of the pauper class. It will be a great triumph if it can be kept within its present bounds. To attend to this most helpless section of the community a special medical service is indispensable, and nothing to my mind is more undesirable than that members of this class should be allowed a choice of doctors. All the evils so well portrayed by the Minority Commissioners would be the certain accompaniment of such a concession, and the administrative difficulties that would arise in a large and populous union, where all the medical practitioners were ordering relief in competition with one another for poor applicants, can be better imagined than described.—I am, etc.,

MAJOR GREENWOOD,
Honorary Secretary, Poor Law Medical Officers' Association of England and Wales.

London, Jan. 22nd.

## PRISON DOCTORS AND THE HOME OFFICE.

SIR,—Sir Victor Horsley's memory is short, or his notions of attack and defence are peculiar. Keeping to his familiar tactics of giving the lie direct, he calls it a "deliberate misstatement" that he is attacking the prison doctors, "whereas," he says, "all my letters and your leading article have obviously been written to show that the guilt of forcibly feeding political prisoners rests upon the Home Secretary and upon Dr. Donkin, but *not* on the prison doctors." *Litera scripta manet.* Here are Sir Victor Horsley's own words:

> The Lord Chief Justice suggested that the medical officer had to act on his own responsibility and forcibly feed to save the prisoner's life, whereas in real fact he saved her life by ceasing his professional care and life-saving attentions, and by turning her out into the streets of Birmingham. The responsibility throughout was never the medical officer's, as suggested by the judge's question, but Mr. Gladstone's, who directed operations from the Home Office (*Westminster Gazette*, December 13th, 1909).

In this passage, the gist of which he repeats in your issue of January 22nd, there are two main assertions. One is that the responsibility—now become the guilt, and shortly, no doubt, to become the crime—of feeding the prisoners is on Mr. Gladstone and not on the prison doctor. (There is no word about Dr. Donkin, though Sir Victor Horsley now says: "All my letters . . . have been written to show that the guilt . . . rests upon . . . Dr. Donkin.") The other assertion is a direct accusation against Dr. Helby—first, of professional misconduct or professional incompetence; and, second, of inhumanity.

If it is not an attack upon a medical man, to say that he saved the life of his patient by ceasing his professional care, there is no longer any meaning in words. And what does Sir Victor Horsley mean by saying that Dr. Helby turned the prisoner out into the streets of Birmingham? The prisoner was discharged from prison. Sir Victor Horsley calls this "turning her out into the streets"—a mere vulgar raising of prejudice. He might as well call it "robbing her of her means of maintenance." It would be less inaccurate to describe it as "restoring her to the comforts of her home." But why put any gloss at all upon the description? Why, except for the purpose of throwing odium upon the medical officer who is alleged to have done the act?

But, when he made this imputation on Dr. Helby, Sir Victor Horsley must have known that the imputation was unfounded. Sir Victor Horsley may be ignorant of the comparative merits of rectal feeding and nasal feeding, but he cannot be so ignorant as not to know that the prison doctor has no more power to discharge a prisoner than he has to prolong her sentence.

It was after this accusation against Dr. Helby had appeared in a non-medical paper, that Sir Victor Horsley

accused Dr. Donkin of "disloyally helping to thrust on his profession, and on its work, the odium," etc. Surely a more memorable accusation has not been made since Satan first reproved sin.

Dr. Helby and the Home Secretary are blamed for turning out Mrs. Leigh—starved, weak, and suffering—into the streets of Birmingham. Ought they to have kept her—starved, weak, and suffering—in prison, or have sent her home—starved, weak, and suffering—by balloon? Aeroplanes are cheap to-day, it is true; but if this method had been pursued, Sir Victor Horsley would, no doubt, have made it the ground of another grievance.

Your readers will not fail to mark the courtesy, moderation, and good humour of Dr. Helby's letter, nor to contrast it with the feeble violence of Sir Victor Horsley, who seems to take his clients, the suffragettes, as his model in controversial methods. The one shouts "Votes for women!" and the other shouts "Liar!" or its equivalent, and both are aggrieved that they fail to convince. Let me assure Sir Victor Horsley that positive evidence is not demolished by calling it "an imposition," "a deliberate distortion of the facts," or "a final and deliberate misstatement," and this I shall continue to hold, even though he seeks to disprove it by chaining himself to my area railings.—I am, etc.,

London, W., Dec. 15th, 1909. CHAS. MERCIER.

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SIR,—I asked Sir Victor Horsley if officials—it matters not whether Ministers of State or medical men—in charge of prisoners ought to allow their sympathy, or lack of it, with this or that legal offence to influence their conduct towards their charges. He answers that I suffer from an insufficient acquaintance with the facts, and that I compare a suffragette to a murderer. Will he, then, tell me of what material facts I am ignorant; and will he please note—it seems to me a very material fact—that I compared suffragettes to murderers, not with respect to their degree of criminality, but only with respect to the circumstance that they are all equally charges of the prison officials?—I am, etc.,

Southsea, Jan. 23rd. G. ARCHDALL REID.

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## PART-TIME MEDICAL OFFICERS OF HEALTH.

SIR,—I am pleased to find that it appears likely that the threatened interference with part-time appointments in the profession generally may bring a sympathetic reconsideration of the views of the British Medical Association with regard to the part-time medical officer of health. I have read with great interest the leading article in the JOURNAL of January 22nd, and note that you appeal to members of the sanitary service to await the result of the next Representative Meeting. In the same article you state that only eight out of ninety-six Divisions approved of part-time medical officers of health; but, Sir, I would ask you in fairness to consider how these decisions were obtained. At any rate in my own Division the meeting was called in Folkestone at 8 o'clock on Saturday night, and was attended by less than a dozen men, all of whom I understand practise in Folkestone or Dover. How shall a decision come to at such a meeting be taken as expressing the views of the profession generally, and what chance has the medical officer of health in an outlying rural district of recording his vote? If you take these facts into consideration I think you will see that it is asking a good deal of the rural medical officer of health when you require him to sit still and watch a powerful Association of which he is a member, and which is supposed to be established for his benefit, as well as others, passing resolutions by its governing body which threaten to deprive him of a considerable portion of his income, and brand him as incompetent and untrustworthy. The assumption in the circular to the Divisions that the work can be better done by the whole-time man is perfectly gratuitous, and no shred of evidence has been produced in proof of it.—I am, etc,

New Romney, Jan. 24th. HENRY HICK.

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## THE TREATMENT OF CHRONIC DUODENAL ULCER.

SIR,—Will you permit me as a surgeon with a considerable experience of gastric and duodenal ulcers to make a few observations on the article by Dr. E. C. Hort (p. 76)?

First, as to the five cases of failure of operation to relieve the symptoms of duodenal ulcer. In no case does he state the nature of the operative findings. In only two of them is any symptom mentioned which might not occur in purely functional derangement. Unless the *fact* of ulceration was demonstrated at the operation the cases obviously prove nothing. Nor does Dr. Hort state the nature of the operation. For all that he states they might have been merely negative explorations. Assuming that an operation was actually performed on the stomach or duodenum in each case, it may be inferred that it consisted either in excision of the ulcer or gastro-enterostomy, or possibly both. One would like to know which of these methods was adopted. It is well known to surgeons with any experience of this field of work that when a chronic gastric ulcer is situated at a distance from the pylorus gastro-enterostomy gives only temporary relief, and is often followed by a return of pain, and sometimes even haemorrhage, though the latter is rare. For chronic ulcers situated away from the pylorus, excision, and not gastro-enterostomy, is the proper treatment, and this has, in my own experience, been invariably completely successful. Of course, when there is more than one ulcer this course may not be feasible, and gastro-enterostomy may be the only surgical alternative. In my own experience—and I believe in that of most other surgeons—when the ulcer is situated in the neighbourhood of the pylorus, either on the gastric or duodenal side, the operation of gastro enterostomy rarely fails to bring about a complete and permanent cure. My faith in this position will not be shaken unless some far more explicit evidence is produced than that which Dr. Hort brings forward.

With regard to Dr. Hort's own suggested method of treatment I have quite an open mind, but here again he fails to tell us just those things which we require to know before we can form any opinion. At the beginning of his article he says that he has been directly concerned in over 70 cases of gastric and duodenal ulcer, of which 24 have been diagnosed by himself and other physicians. Towards the end of the article he says that directly and indirectly he has applied his principles of treatment to more than 200 cases. May I point out that cases which have been treated by operation have at least this advantage from a controversial point of view—that the rightness or wrongness of the diagnosis is verified beyond the possibility of dispute? Cases treated without operation are diagnosed merely with a variable degree of probability into which the personal element largely enters.

This being so from the nature of things, it is doubly necessary for Dr. Hort, if he wishes to establish his contentions, to bring forward the whole of his available evidence in a form which can be judged and criticized. If he succeeds in establishing to the satisfaction of reasonable men that real gastric and duodenal ulcers can be more satisfactorily treated and more permanently cured than by surgery, I shall be one of the first to put his method into practice. At present even the method itself is not described with sufficient detail to enable any one to give it a trial.—I am, etc.,

Wolverhampton, Jan. 14th. E. DEANESLY.

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## WHITEHEAD'S OPERATION FOR PILES.

SIR,—I should like to endorse Mr. Murmery's remarks on Whitehead's operation for piles. I regarded it as the worst operation that has ever been introduced for the cure of this common malady. That it cures the disease in most cases must be admitted, but not more effectively than the simpler plan of removing each bunch separately. The operation has the risk of producing a disease far more serious than piles—this is, a fibrous annular stricture.

In the hands of so skilled an operator as Mr. Walter Whitehead the operation, no doubt, is free of such a risk, but this is certainly not the case in the hands of inexperienced operators, for I have seen quite a number of cases of annular stricture following the procedure.

The operation is unnecessarily severe for the class of haemorrhoids we meet with in the South of England. After any operation for piles a stricture may occur, and this arises from removing too much of the mucous membrane with the submucous fibrous tissue. I consider, indeed, that an operator cannot be too careful in *not*

removing a complete ring of the bowel. The risk of stricture can only be certainly avoided by carefully leaving between the bunches of piles portions of mucous membrane which will ultimately stretch. This means the removal of each individual pile separately, according to its size and extent. An operation performed in this manner is one of the most satisfactory and certain in surgery.—I am, etc.,

London, W., Jan. 25th. HARRISON CRIPPS.

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SIR,—The radical operation for piles described by me at the Annual Meeting in 1907,[1] and referred to by Mr. W. S. Richardson in the JOURNAL of January 1st, is quite distinct from Whitehead's operation. It was first spoken of as a modification of Whitehead's operation, because like it, the whole plexus of veins round the sphincter ani should be removed, but its technique and results differ considerably.

Mr. Lockhart Mummery's remarks in the JOURNAL of January 22nd as regards Whitehead's operation are correct. They were these and other disadvantages that made me think out some other procedure by which a simple, safe, clean, scientific, and radical operation might be performed, rather than a serious, difficult, and often unsatisfactory one. Compared with all other operations of modern surgery, the cautery clamp or ligature seemed out of date now, and are rather more in keeping with the days of mediaeval surgery. A clean dissection and removal of the offending structure followed by rapid union of the incision, is a considerable advance on a septic sloughing or granulating wound.

In the operation I advise the mucous membrane lining the anal canal and, incidentally, the sensitive area of the rectal orifice, is not removed, it is dissected upwards, and replaced when the haemorrhoids have been removed. As there is no haemorrhage while the dissection is being done, the sphincter ani is left intact and uninjured.

Mr. Lockhart Mummery refers to the more frequent recurrence of piles after Whitehead's operation than after other forms of operation, although performed probably far less frequently. I would point out that Whitehead's operation is usually done for the more serious cases, and also that at the operation the free haemorrhage often makes it difficult to see that the whole of the veins have been removed. It stands to reason that if all the veins are removed, recurrence is less likely than if only a few of the worst, as with the ligature or cautery. When there is no haemorrhage, time and care can be taken to dissect away all dilated or thrombosed veins, and it is often astonishing what a number of these there are, which, unless seen in this manner, would very likely be overlooked.

As to incontinence, loss of sensation, contraction of the anal canal, or stricture following, I have never yet seen a single instance of either in any cases operated on by the method I advise, although it is now many years since first this operation was adopted by me.

It is not only in very bad cases of piles that this operation is suitable, but in milder ones also, the period of recovery and ultimate results are better than if treated by those methods more frequently adopted.—I am, etc.,

Bournemouth, Jan. 22nd. A. HEYGATE VERNON, F.R.C.S.

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## "MR. POMEROY ON VACCINATION."

SIR,—I do not see why you should concern yourself with the grounds of my *post-mortem* diagnosis of malignant disease in the case at Bristol on November 15th last, which is the subject of your article, January 22nd, p. 215. You publish to the world your opinion that I have a warp in my mind, owing to my opposition to Dr. Jenner's now almost neglected cow-pox, which disqualifies me even in such matters as cancer and tubercle, both of them the subjects of books and papers by me for the space of thirty-five years. You also decide, before hearing what I may have to say, that the other diagnosis in the case, tubercle, "will be accepted as final by all who can form an unbiassed judgement on the facts." After such professional amenities as those, I certainly ought to ignore your existence. But as you have taken care to insinuate that I am afraid of the light, I will answer the questions you have asked me.

1. Why did I not attend the inquest? If I had any evidence to give which would bear the light of a court, was it not a good opportunity of bringing it before the public? Every one who has any practical knowledge of inquests knows that the coroner does not call evidence from a pathologist who may have attended the *post-mortem* examination by his leave as the representative of some interested party. He hears the evidence of his own pathologist, who may, indeed, be further questioned by a solicitor prompted by the medical man beside him. I advised my Bristol antivaccinist friends not to be represented at the inquest, because their suspicion that the poor girl's illness was somehow due to her vaccination could not be entertained after the *post-mortem* examination, however tenable it may have been while she was alive and no diagnosis made. The discovery of unsuspected malignant disease in the pelvis, with secondary extensions, explained the mystery, as well as pointed to the existence of the disease prior to her sudden breakdown just after her vaccination. I did not then know but that Dr. Walker Hall, when he came to the microscopic part of his work, might take the same view of the case as myself; but, at all events, there was no use trying to make a jury understand, by cross-examining questions through a solicitor, the difference between malignant disease and tubercle. My advice was followed, and no attempt made to question the diagnosis, which, as I was surprised to learn, was "tubercle of many years' duration."

2. Have I made any report on the tissues which I took away? I have indeed. Has the report been published, and where? Let me ask you another question, Why *should* a report to those who employed me have been published anywhere? But as you are curious about the reasons for calling this case malignant disease, you shall have them now.

The new growth was everywhere dense and tough to cut, and in most places coarsely fibrous. There was no caseous detritus and no friability anywhere. The whitish infected lymph glands along the lumbar vertebrae were not at all swollen, often flattened, surprisingly thin, glistening, and very dense. The right suprarenal was occupied over more than half its superficies with three whitish masses, which were so thinly spread out that the organ remained the same shape and thickness as the normal one on the left side. The collapsed, spongy lungs both contained several deep-seated hard knots, of a dirty-grey colour, some as large as marbles, with firm outlines, and no softening in their centres. Microscopic sections from those three chief secondary seats showed the cells to be round, ovoid, or quadrate, and of a rather small and uniform size for cancer; they were set in a reticulum of coarse fibres, which was almost without cells in places of the lung nodules. The type was more like malignant lymphoma, or "fibrous cancer," than the usual ovarian cancer. The case resembled those fibrous ovarian tumours with metastases in comparatively young women, described by Virchow in his chapter on sarcoma, one of the authorities cited for them being Wilks (*Path. Trans.*, x). You are good enough to say that I know what cancer is. I know also what tubercle is. My diagnosis was made with no bias in favour of one or other. If I had wished to give an unscientific opinion, so as to make plausible the suspicion of an origin from matters inoculated, I should rather have diagnosed tubercle.

Since the day after the inquest, November 18th, 1909, until three days ago, I had heard nothing of the case, and had supposed that it was "dropped absolutely," as I advised that it should be.—I am, etc.,

London, Jan. 25th. C. CREIGHTON, M.D.

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## THE PATHOLOGY OF BACTERIA.

SIR,—For years we have been taught that the toxic micro-organism is the dominant cause of many diseases. Other causes are merely contributory, and, so to say, recessive. How much longer can we go on believing this?

For some time doubt has been overcasting the sky for many of us; but it is not often, perhaps, that within the limits of one number of the BRITISH MEDICAL JOURNAL so many facts giving furiously to think are published in juxtaposition, as was the case in the issue of December 25th, 1909.

On p. 1798 Dr. G. E. Lloyd describes the case of two

[1] BRITISH MEDICAL JOURNAL, 1907, vol. ii, p. 903.

brothers in the same house, of whom one had tonsillitis with sloughs, believed to be diphtheria, but no bacilli; while the other, apparently in perfect health, had bacilli but no diphtheria. The former child had antitoxin injected, and next morning the temperature was normal and the throat almost clear; but I have seen this clearing and fall of temperature happen again and again spontaneously in so-called diphtherial (? pseudo diphtheritic) throats.

On p. 1813 Professor H. M. Vincent, of the French Military Medical School, Val-de-Grâce, in a paper on the "carriers" of pathogenic microbes, is reported to have said: "In certain military epidemics observed in France, 15 to 20 per cent. of the men in the same regiment have been found to be healthy carriers of the diphtheria bacillus." Fifteen to 20 per cent. of healthy people presenting the dominant characteristic feature of a deadly disease is surely an embarrassment of riches to any pathogenic theory; it comes near to being a *reductio ad absurdum*.

On page 1816 is an account by Dr. Laetitia Andrew-Bird of life and work in the East End of London, from which I quote: "The women of the East End have a marvellously low mortality in childbed. This is all the more remarkable since, in an ordinary case of confinement, no precaution is taken by the patient herself against septic infection. The woman wears her dirty clothes, including the skirt which has been trailing along the streets, all through labour. Yet in one medical man's practice only 18 deaths occurred in 5,000 consecutive cases."

I make no comments; I am not out for an argument; but the facts may well set us thinking. It is not suggested that micro-organisms have no connexion with diseases; but what exactly *is* the connexion?—I am, etc.,

Stafford, Jan. 2nd. JOHN PRIESTLEY.

## CIRCUMCISION IN ANCIENT EGYPT.

SIR,—In the report of Professor James Swain's presidential address to the Bristol Medico-Chirurgical Society[1] the statement is made that "there are no representations of Egyptian circumcision earlier than the time of Rameses II (B.C. 1310–1243)."

In the BRITISH MEDICAL JOURNAL of March 28th, 1908, (p. 732, first footnote), I called attention to a series of ancient Egyptian pictures of the operation of circumcision, which were carved 2,000 years before the time of Rameses II, and referred to the bodies of early prehistoric men from Egypt who had been circumcised a thousand years earlier still.—I am, etc.,

G. ELLIOT SMITH.

Anatomical Department, The University of Manchester, January 24th.

## MEDICAL PARLIAMENTARY ROLL.

SIR,—I have to thank Dr. Keenan for the interesting information that a Dr. Walter Kelly sat in a "Parliament held in Dublin in May, 1689, by King James II, known as the 'Patriot Parliament.'" Neither Dr. Kelly nor the Parliament referred to, however, are mentioned in the official list; the reason, no doubt, being that in May, 1689, James had ceased to be King, having been deposed the year before. Dr. Keenan's contribution, however, is nevertheless a welcome addition to the Roll of Parliamentary doctors.

For another Irish Parliamentary doctor I have to thank a correspondent who has been so good as to point out the following omission from my list:

Barry, Sir Edward, Bart., M.D.Dub., Oxon., and Leyden, F.R.C.P.Irel. and Lond. (Charleville Borough 1740–1760). Sir Edward was Physician-General to the Forces in Ireland, Professor of Medicine in Dublin University, and President of the King and Queen's College of Physicians. He received the Baronetcy in 1775.

—I am, etc.,

London, W., Jan. 23rd. S. D. CLIPPINGDALE, M.D.

SIR,—I will add one more name to the Medical Parliamentary Roll—Dr. J. W. Noble, M.B Cantab., Physician to the Leicester Infirmary, 1848–56. He was elected M.P. (Liberal) for Leicester Borough, April, 1859, and died in January, 1861, at Malaga, in Spain. His daughters built a small hospital there in his memory. It is called the "Noble Hospital," and has about twenty beds. It has been taken over by the Government. I went over it about three years ago.—I am, etc.,

Leicester, Jan. 24th. GEO. C. FRANKLIN.

[1] BRITISH MEDICAL JOURNAL, January 22nd, p. 218.

## WOMEN'S LAVATORIES AT RAILWAY STATIONS.

SIR,—My attention having recently been drawn to the offensive and very insanitary condition of the lavatory accommodation (especially that for women) at a certain station on the London and South-Western Railway, I was very glad to see your comprehensive notice of the subject in the issue of January 8th, and it may interest you to know that I wrote to the general manager of the line about it, calling attention to your article, and also to the very practical letter by "H. H. E." of January 15th, saying that I thought the subject was worthy the attention of the directors.

I trust, therefore, that by your powerful advocacy and the combined professional action, always so desirable in the interest of the public, matters may be improved.—I am, etc,

ARTHUR E. T. LONGHURST, M.D.

Chandlersford, Hants, Jan. 23rd.

SIR,—I think I voice the desire of every woman traveller in the following matter. Why not do away with the box seats which no one uses, as we all stand for fear of infective complaints, and just place the usual pan, with a narrow *metal* rim, well into the room, so that we can stand over it without risk of getting skirts damaged? Also, why should any one pay for performing a natural function?

Another even more crying evil is the scarcity of such places for women. On every platform, as the train draws up, there is a rush of men to their lavatories, which are always placed on the platform, but why should women, who have even greater need of such places, have to go the length of the platform, pass, with the usual delay of showing tickets, through the barrier to one central waiting room, which serves all platforms, and risk losing the train owing to the crowded condition of the lavatories?

This seems to be a matter which the medical profession are the only people to act in.—I am, etc.,

January 23rd. A DOCTOR'S WIFE.

## THE APPEAL ON BEHALF OF MR. W. H. COX.

SIR,—As a neighbour of Mr. Cox, the *x*-ray martyr, and conversant with the facts of the case, I thank you for the insertion of Dr. F. W. Alexander's letter in support of Sir William Treloar's appeal.

Dr. Alexander's statement is no exaggeration when he says that "a more pitiable case I have never witnessed in any human being during my thirty-two years' professional career." Words fail to express the pathetic condition of the man, who has sacrificed health and fortune for the benefit of his race, and who bears his sufferings with heroic fortitude. Testimonies are daily to hand from leading members of the medical profession expressing their indebtedness to Mr. Cox, whose work they acknowledge to have been of the greatest service. Visiting him last week, he said: "When I was working with the doctors, I little thought the help I rendered would return to me in such generous sympathy as I am receiving from them now." Mr. Cox's medical attendant, Dr. R. Taylor, says: "It is not outside my professional office to mention the very great deal which this public action is meaning to him, both as a comfort to his fatal trouble, and as a hope of leaving his family in some measure provided for." Mr. Cox is in his 47th year, and, when able to follow his calling, was an enthusiast in scientific research. Generous and self-sacrificing, he lived for others, and was always ready to give the *x*-ray treatment freely to the poor who could not afford to pay. Sir William Treloar, in raising a fund for Mr. Cox and his young family, is doing a kind and timely act. Help given is opportune, as the small savings of the dying man are practically exhausted. I may add that the average expenses for dressings alone to relieve his sufferings have averaged for the last two years £3 per week.

I strongly support the appeal of Sir William Treloar, who will be glad to receive subscriptions at his address, 69, Ludgate Hill, London, E.C.—I am, etc.,

London, N.E., Jan. 25th. THOMAS RIPPON.

## MISCONCEPTIONS CONCERNING THE RIVIERA.

SIR,—As the letter published in your issue of January 15th from the Syndicat des Hoteliers de Menton in no way contradicts, but merely protests against the statements I made in my paper at Belfast—which indeed were well within the truth—it is not necessary for me to discuss it.

At the same time it raises the question, ever of growing importance, whether the medical faculty is justified in allowing the prejudice against consumptives to spread as it does, from hotel to hotel and from town to town.

It took centuries for the profession to discover that phthisis was infectious, and it is doubtful, had we depended upon clinical observation and experience alone, whether it would not have taken centuries more. We cannot make up for lost time by overdoing the thing now, and exaggerating its dangers. Is a phthisical patient who is taught to expectorate into a suitable receiver a danger to any one? If not, why should he be treated as an outcast? Till two years back I had in my house here the captain of a yacht whom I wanted to help. No one in the house had any doubt that the man was dying of phthisis, as nearly every symptom was pronounced; but all accepted my assurance that there was nothing to fear. The man died early in the first winter that I refused to have him back, and, of course, no one here was infected.

The late Professor Straus of Paris wrote—and no one knew better than he—that the air expired by a phthisical patient does not contain tubercle bacilli nor any other bacilli, and yet people will cross the street to avoid a consumptive. Sir Douglas Powell has given his opinion in these words: "My own personal experience and observation convince me that, apart from artificial conditions, such as those brought about by experiment, and in the ordinary circumstances of life, phthisis is not an infectious malady."[1] Laënnec's experience was the same.

The patient experiments of many observers seem to me to show how difficult it is to disseminate phthisis, and how impossible it is when elementary precautions are adopted by invalids. Why should the phthisical patient, as such, be held responsible for an evil of which 90 per cent. is the indirect consequence of overwork, carelessness, bad hygiene, influenza, pneumonia, etc.? Why, too, should crowds of people now suffer from discomfort, insomnia, rheumatism, neuralgia, or bronchitis, in their endeavours to avoid the risk of phthisis, by prematurely treating themselves for it in their panic, and adopting, even at night time, the "open air" craze?

The popular persecution of the consumptive, and alarming of the healthy, is a disgrace to science and civilization. To science, because the case against the criminal is so weak, and to civilization because he is the victim and scapegoat of cupidity, selfishness, and prejudice, against which he has no appeal. It is for the profession to do him justice.—I am, etc.,

Mentone, Jan. 17th. D. W. SAMWAYS.

[1] *Diseases of the Lungs*, 1893, p. 348.

THE *New York Medical Journal* states that interesting reports on the practice of medicine and pharmacy in foreign countries continue to be issued by the Bureau of Manufacturers of the Department of Commerce and Labour. In response to an inquiry regarding conditions in Norway, Consul-General Henry Bordewich, o Christiania, reports that the relation existing between physicians and pharmacists is generally very friendly. The inspection of pharmacies is conducted in the smaller towns by the district physicians, who are sometimes assisted by practitioners appointed for the purpose by the Government medical board, under whose direction the examinations are made. A pharmacist's licence may be revoked after he has been convicted of drunkenness, fraudulent actions in his business, and for bankruptcy. The pharmaceutical examination boards are permanent. They are appointed by the Government, through its medical board, whose chief is a physician. Norway has a permanent pharmacopoeia commission, consisting of three proprietors of pharmacies and three professors of medicine. The first Norwegian pharmacopoeia was published in 1854, the second in 1870, and the third in 1895.

# Medico-Legal.

## FEES OF PLAINTIFF'S DOCTOR FOR ATTENDING EXAMINATION BY DEFENDANT'S DOCTOR.

AN important decision bearing on the medical examination of plaintiffs in cases of actions for damages for personal injuries was given in Dublin in the King's Bench Division on January 21st. The action was one in which the plaintiff had sued the Dublin United Tramway Company and had recovered damages. Prior to the trial the defendants, in the exercise of their right, required the plaintiff to be examined by their own medical adviser. This was done twice, and on each occasion the plaintiff's doctor also attended, and the fees for these two attendances were included in the plaintiff's costs, for which the defendants were liable. The defendants objected to this item on the ground that the attendances of the plaintiff's doctor were purely voluntary, but the Taxing Master overruled the objection, and in consequence the matter was referred to the King's Bench. The Lord Chief Baron, in giving judgement, upheld the decision of the Taxing Master, and said that it had become a settled practice that, in a case such as the present one, when an independent medical examination was applied for, there should be a doctor present on the other side. That was most desirable in the interests of the administration of justice, and he had never known a case of an inspection by the defendant's medical man at which the plaintiff's medical man had not also an opportunity of being present. Furthermore, the Taxing Master had jurisdiction to allow the costs of such attendance in cases where the plaintiff had obtained a verdict. The plaintiff's doctor, when he came to give evidence, should be in a position to know what to expect from the doctor who would be called on the other side, and for the purpose of showing that what took place on the examination by the defendant's doctor was not inconsistent with his own direct evidence, he should, of course, be present at such examination and be allowed his fees accordingly.

## WORKMEN'S COMPENSATION.

*Alleged Death from Hernia.*

IN a case heard before the Judge of the County Court, Carmarthenshire, last month, a widow claimed compensation on account of the death of her husband, a seaman, who had been injured in April, 1908, while at sea. It was contended that the injury had caused hernia on the left side, and medical evidence was called to prove that the hernia was irretainable by a truss, and that death was due to exhaustion produced by vomiting and pain. Dr. Anstey-Chave, medical inspector of seamen to the Board of Trade, Cardiff, attributed death to Bright's disease, and expressed the opinion that the hernia could have been retained by a suitable truss. Similar evidence was given by Dr. J. Barry, medical examiner to the Shipping Federation, Cardiff. His Honour found that the man died from Bright's disease, and gave judgement against the applicant.

This case is interesting not only from the point of view of the conflict of medical evidence, but from the fact that there does not appear to have been a necropsy. The Court had to find a verdict on the evidence placed before it, and His Honour was, of course, entitled to draw his own conclusions. The responsibilities of the Court would have been less onerous, and much greater satisfaction would have been afforded to all parties if it had been possible to produce *post-mortem* records.

## PARTNERSHIP ACCOUNTS.

H. writes: When a partnership is entered into, and a portion only of an account is paid by a patient containing items due both to the period before and after the partnership, what proportion, if any, is to be paid to the partnership account?

*** The whole of the earlier items must be paid before anything can be claimed as due to the partnership account. The legal aphorism is, *Qui est prior in tempore, potior in lege.*

# Universities and Colleges.

## UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

*M.C.*—J. P. Hedley, King's; A. S. B. Bankart, Trin.
*M.B., B.C.*—E. H. V. Hodge, Cla.; F. G. Cawston, Gonv. and Cai.
*M.B.*—D. G. Pearson, Pemb.
*B.C.*—L. Meakin, Trin.; F. R. Thornton, Trin.; H. Chapple, Joh.; H. G. Rice, Joh.; H. L. Duke, Gonv. and Cai.; G. Holmes, Gonv. and Cai.; H. E. Humphrys, Gonv. and Cai.; J. G. Saner, Gonv. and Cai.; W. B. G. Angus, Christ's.

The following candidates are entitled to receive the Diploma in Tropical Medicine and Hygiene:

Roy Fearon Baird (Captain I.M.S.), John Francis D'Mello, Arthur Brownfield Fry (Captain I.M.S.), Thomas Henry Gloster, Ernest Charles Hodgson (Captain I.M.S.), Robert McCheyne Linnell (Joh.), Krishnaji Shripat Mhaskar, Edward Pigott Minett, Herbert James Walton (Major I.M.S.).

*Professorship of Biology.*

R. C. Punnett, M.A., Fellow of Gonville and Caius College, has been elected to the Professorship of Biology.

## UNIVERSITY OF BIRMINGHAM.

PROFESSOR J. W. TAYLOR has resigned the Chair of Gynaecology, and the Council has passed the following resolution:

That the Council accepts the resignation of Professor Taylor with great regret. It desires to convey to him its thanks for his services to the university and its best wishes for his restoration to health.

Dr. Robert Simon, F.R.C.P., Physician to the General Hospital, has been elected to the Chair of Therapeutics, as successor to the late Professor Foxwell.

On the nomination of the Dean of the Medical Faculty, the council has appointed Professor Peter Thompson Sub-Dean of the Faculty. Mr. George Heaton, F.R.C.S., has been appointed Lecturer in Operative Surgery, and Dr. Edgar P. Hedley Demonstrator in Chemistry.

## VICTORIA UNIVERSITY OF MANCHESTER.

SIR W. J. SINCLAIR, Professor of Obstetrics and Gynaecology at the university, has been appointed Pro-Vice-Chancellor, in place of Professor William Stirling, whose term of office has expired.

Professor Conway has been elected Dean of the Faculty of Arts, and Dr. Carroll Dean of the Faculty of Music, the deans of the other faculties being re-elected.

At a recent meeting of the university council a resolution was passed expressing regret at the death of Dr. Ludwig Mond, and placing on record its sense of his service to the cause of science and his great generosity to the university.

Mr. F. H. Gravely, M.Sc., has resigned his position at the university to take up his new duties as Assistant Superintendent of the Natural History Section in the Indian Museum, Calcutta. Mr. J. H. Koppern, of the University of Freiburg, has been appointed Temporary Assistant in the Department of Zoology.

The committee for the election of the honorary medical officers at the Manchester Royal Infirmary has co-opted the following representatives of the university: The Vice-Chancellor, Sir Frank Forbes Adam, Sir Edward Donner, Mr. Hermann Woolley, and Mr. Ivan Levinstein.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A COUNCIL meeting was held on January 13th, Mr. H. T. Butlin, President, in the chair.

*Lecturers.*

Mr. Edmund Owen was appointed Hunterian Orator for 1911, and Mr. A. Pearce Gould Bradshaw Lecturer for 1910.

*The Working of the Midwives Bill.*

It was reported that the following letter had been addressed by the President to the Clerk of the Privy Council:

Royal College of Surgeons of England,
Lincoln's Inn Fields, W.C.,
15th December, 1909.

Sir,

In July, 1906, the Council of this College drew the attention of the Lord President of the Privy Council to the fact that no adequate provision has been made in the Midwives Act for the "Remuneration of Medical Men summoned on the advice of Midwives," and they contended that the Act would not work efficiently until such provision had been made. The uncertainty as to the payment of Medical Men under these circumstances has thus far been attended with grave injustice to the Medical Men who have been summoned; with great anxiety to the Midwives who have summoned them, lest they should fail to obtain assistance when it was most needed; and with consequent danger to the poor women for whom assistance was required.

The Council of the Royal College of Surgeons therefore view with great satisfaction the Recommendations (with the exception of No. 7) on this subject (*b*), which are contained in the "Report of the Departmental Committee appointed by the Lord President of the Privy Council to consider the Working of the Midwives Act, 1902," and earnestly trust that the Report will lead to the introduction of an Amending Act early in the course of the next Session.

With regard to No. 7 of the Recommendations, the Council would point out that the onus of obtaining the fee would be thrown upon the medical man who had been summoned by the midwife, and that he might even be compelled, in accordance with the Recommendation, to attempt to recover his fee in Court before he could claim it from the local authority.

The Council of the Royal College of Surgeons also desire to express their satisfaction with the Recommendations in the Report which deal with Prematurely-born Children (*d*. 6) and with those which refer to Ophthalmia Neonatorum (*d*. 7). The number of cases of blindness which are due to that form of Ophthalmia is very large, and many of the individuals who thus become blind are a permanent burden to the State.

I am, Sir,
Your obedient servant,
HENRY T. BUTLIN,
*President.*

Sir Almeric FitzRoy, K.C.V.O.,
*Clerk of the Privy Council.*

REPLY FROM PRIVY COUNCIL.

Privy Council Office,
London, S.W.,
17th December, 1909.

Sir,

Referring to your letter of the 15th instant, I am directed by the Lord President of the Council to say that His Lordship notes with satisfaction that the recommendations of the Midwives Act Committee on the subject of the "remuneration of medical men summoned on the advice of midwives" (with one exception) commend themselves to the Council of the Royal College of Surgeons.

With regard to the recommendation to which exception is taken (see paragraph 80 of the report), I am to request you to be good enough to call the attention of the Council to the evidence of Mr. J. Smith Whitaker, who was a witness on behalf of the British Medical Association (Nos. 5605-8, 5718-9), Dr. Woods (Nos. 1692-5), and Dr. Hope (3034-8). A perusal of that evidence will probably satisfy your Council that the interpretation they have placed upon the recommendation in question (which is described by Mr. J. Smith Whitaker as "a desirable and reasonable arrangement") is a somewhat strained one, and that the intention of the recommendation was not to cast on the medical man "the onus of obtaining the fee," but merely to secure that he shall at least test the patient's willingness to pay before applying to the Poor Law authority for payment of his fee.

I am, Sir,
Your obedient servant,
ALMERIC FITZROY.

The President of
The Royal College of Surgeons of England,
Lincoln's Inn Fields, W.C.

## CONJOINT BOARD IN SCOTLAND.

THE following are the lists of successful candidates at the quarterly examination of this Board concluded on January 21st:

*First Examination.*—Rastamji Ratanji Dadina, Bombay; A. E. F. L. Forbes, France; L. Lazarus, Natal; W. Ashworth, Halifax, England; Prayag Deb Banerji, Allahabad; W. N. P. Williams, Holywell, Flints; Pasupulet Krishnasaumi Kuppuswami Naidu, Madras; Nallamma Williams, Ceylon; G. L. Pierce, Llangollen; A. B. Bull, Cape Colony; J. H. Cooper, Lancashire; and J. Calder, Lanarkshire; and 9 passed in Physics, 3 in Biology, and 4 in Chemistry.

*Second Examination.*—M. McL. Bainbridge, Roxburghshire; W. Brennan, County Clare; W. A. Reardon, Rangoon; W. Chapman, British Guiana; Mary W. Doran, Magheralin; W. E. P. Briggs, Rochdale; Jamshed Hirjibhoy Appoo, Bombay; M. P. Power, County Cork; J. B. Wilman, England; J. McCagie, Edinburgh; J. Scott, Scotland; J. Hegarty, Belfast; W. A. Rees, Wales; and P. W. Laidler, Gateshead; and 8 passed in Anatomy and 3 in Physiology.

*Third Examination.*—G. F. Hegarty, Cork; E. C. A. Smith, Ballary; E. L. Matthew, Corstorphine: A. E Mackenzie, India; Furdon Framji Keravalla, India; I. J. McDonough, Melbourne; H. Russell-Macnab, co. Down; W. J. H. Davies, Liverpool; H. Mathewson, co. Tyrone; F. M. Stewart, Portree; R. W. D. Hewson, Cheshire; M. J. Ahern, co. Kerry; A. M. Billings, Birmingham; Rastamji Ratanji Dadina, Bombay; Badrinath Varma, India; Maganlal Maneklal Daru, Bombay; Framroze Limji Bhajiwalla, Bombay; and Triloki Nath Sinha, Benares; and 1 passed in Pathology and 5 in Materia Medica.

*Final Examination.*—Bikrama Jit Sani, India; J. Young, Newcastle-on-Tyne; A. A. Campbell, Canada; I. C. Pratt, Sierra Leone; Samuel Henri Siung, British Guiana; W. Tregea, Birmingham; G. M. H. Osborne, New Zealand; Badrinath Varma, Allahabad; Saravaiya Amritaraj Chetti, Bangalore; G. W. Rundle, Australia; C. L. Ievers, co. Clare; Noshir Shapoorji Bhedwar, Bombay; Manakshy Emperumal Naidoo, Madras; E. A. S. Carrington, Barbados; Ampattu Thomas Kuriyan, Travancore; E. P. Maitland, India; J. H. Bennett, co. Cork; R. W. A. Brown, Chester; and V. D. Griffen.

Sixteen candidates passed in Medicine and Therapeutics, 3 in Surgery and Surgical Anatomy, 17 in Midwifery, and 20 in Medical Jurisprudence.

## SOCIETY OF APOTHECARIES OF LONDON.

AT the examination held in January the following candidates passed in the subjects mentioned:

SURGERY.—*†K. Baylis, †J. A. Jones, †E. D. Richardson, *†J. W. Williams.

MEDICINE.—*†J. N. Beadles, †J. A. Jones, *†G. S. Richardson.

FORENSIC MEDICINE.—J. N. Beadles, R. J. Cyriax, S. K. Poole.

MIDWIFERY.—G. J. F. Elphick, J. A. Jones.

* Section I. † Section II.

*Diploma.*—The diploma of the society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery: J. N. Beadles, R. J. Cyriax, S. K. Poole, and J. W. Williams.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. L. Malassez, member of the Paris Academy of Medicine; Dr. P. Lesshaft, formerly Professor of Anatomy in the Medical Faculty of Kazan; Dr. Erik Johan Widmark, Professor of Ophthalmology in the University of Stockholm; Dr. Assanto Spediacci, Professor of External Pathology in the University of Siena; Dr. Otto Kölpin, Lecturer on Mental Diseases in the University of Bonn; Professor Clodomiro Bonfigli, Director of the Public Asylum for the Insane at Rome, a member of the Italian Chamber of Deputies, and author of numerous publications; and Dr. Queirel, Professor of Clinical Midwifery in the Medical School of Marseilles, and author of three volumes on gynaecology, in his 68th year.

# Obituary.

## W. PAGE MAY, M.D.LOND., D.SC., F.R.C.P.LOND.,

LECTURER ON THE PHYSIOLOGY OF THE NERVOUS SYSTEM, UNIVERSITY COLLEGE, LONDON.

WILLIAM PAGE MAY, whose premature death on January 19th science has to deplore, was born on May 5th, 1863. His father died when he was 9 years old, when his care devolved upon his guardian, Sir Alexander Rendall, the well-known engineer, and his cousin, Mrs. Bennett.

On leaving school in 1882, he entered University College, taking the medical and scientific courses for the University of London. He obtained the B.Sc. degree in 1884, passed the first M.B. examination in 1885, the final M.B. in 1888, and in 1890 obtained the degree of M.D., being awarded the scholarships in Medicine at the M.B., and the gold medal at the M.D. examinations. As a student Page May threw himself heart and soul into the life of the college, achieving success both in work and in play. He obtained an Entrance Science Scholarship as well as the Tufnell Scholarship in chemistry and numerous class prizes. As a keen sportsman, he excelled in all the games that he took up, and was one of a small band that made constant use of the racquet court provided by the college. He was to the fore in all matters affecting the students or their clubs and societies. The same spirit of patriotism which during his student days prompted him to take an active part in the common life of the college showed itself later in a wide imperialism. Unfortunately his energies were in advance of his strength, and there seems little doubt that his exertions during his student days laid the foundation of the cardiac mischief which has been responsible for his untimely death.

*Photograph by]* WILLIAM PAGE MAY. *[Lafayette Ltd*

After filling the ordinary resident posts at University College Hospital and that of Resident Medical Officer at the National Hospital for Diseases of the Nervous System, he went to Berlin for some months to work at neurology under Professor Gad. While there he carried out the research on the distribution of fibres in the spinal roots, which was later published in the *Philosophical Transactions*. Considerations of health making it inadvisable for him to settle in England, he decided to practise as a consulting physician in Egypt. It was here that he met his future wife, Beatrice, daughter of Mr. W. G. Evans, whom he married in 1899. From 1895 to 1906 he was in active practice during the winter months at Helouan, returning to England each summer in order to continue his researches in neurology. For these researches he was in 1903 awarded the D.Sc. degree by the University of London. In the same year he was appointed Lecturer on the Physiology of the Nervous System at University College, and in 1906 he finally gave up practice altogether, deciding to devote the remainder of his life to the prosecution of research in neurology. The lectureship was entirely unpaid, but Page May, who was given the use of a small room in the Physiological Laboratory, devoted the whole of his energies to making, at his own charges, a research department in neurology. Each year during the summer session he gave a course of advanced lectures on the nervous system, which were attended by students from all the schools in London. At these lectures he placed the whole wealth of the material, which he had collected with much pains, at the disposal of his audience, so that they admitted the students, so to speak, to the arcana of the research laboratory, and interested them in the subject to an extent which could not be attained by any other method. The cessation of these lectures will be a severe loss to the neurological and physiological teaching in London. At the same time he was active in the prosecution of his original investigations. While still in practice at Helouan, he had published papers on the reaction of degeneration, on the electrical excitability of muscle, and on the innervation of the stomach. Later he devoted himself more exclusively to the central nervous system, and especially to tracing out the different tracts in this system. Four years ago he described a tract of descending fibres (now known as "May's tract") in the posterior column of the cervical region, which had previously escaped the attention of neurologists, and at the time of his death he was still engaged in searching for the cells, probably situated in the mid-brain, from which these fibres were derived. During the last year he published, with Dr. Gordon Holmes, an important research on the origin of the pyramidal tract. Since then he had collected a large amount of additional material dealing with this subject, as well as with the central connexions of the vagus nerve and with the fibres taking origin in the thalamus. It is to be hoped that the labour spent in the accumulation of this material will not be lost to science, and that some of the work will be found sufficiently advanced for publication.

Page May leaves one daughter, whose birth, two months ago, had been a source of great happiness to him.

About a fortnight ago Page May went, with his wife, to Brighton, where he intended to spend a few weeks. On Tuesday, January 18th, being then apparently in his accustomed health and spirits, he went for a stroll with his wife. Seeing a carter ill-using his horse, he was very indignant, and spoke to the man severely. While doing this he suddenly fell down, and was found to be completely paralysed on the right side. He became rapidly worse, and died at 7 o'clock the next morning, the cause of death being probably cerebral embolism.

The way in which he met his death was characteristic of the man. Fearless and large-minded himself, he was

impatient of any conduct associated with meanness or cruelty. His scientific career was practically just beginning, and the work that he had already done gave promise of much greater performance in the future. To those who knew something of the many lines that were being opened up by his work his loss at present seems irreparable. To his friends his death leaves a gap which can never be filled. Ever sympathetic and ready to help those in trouble or difficulty, he was eminently free from the smaller aims of ordinary careers, and was endowed with an enthusiasm and appreciation for all the really larger pursuits of a cultured life, which made his friendship a constant inspiration to all who had the advantage of association with him.

The skill at sports which distinguished May from his earliest student days was marked in the quieter recreations which his state of health led him to take up. He was an excellent golfer, winning last year the Medical Handicap; he was also a first-rate shot and a successful fisherman. Although always delicate and suffering frequently from feverish colds and migraine, he was always in good spirits, and with his ready wit and fund of anecdote was a delightful colleague in the laboratory, and a welcome companion in any society.

Professor Sherrington writes: The premature loss of an ardent and able worker is always a heavy blow; in the case of Dr. Page May many circumstances enhance the grievousness of it. He was a man beloved by all who knew him. He had entered upon a career of singular value to neurology. He was an original investigator who had achieved results of high value, and shown in the obtainment of them a facile mastery of difficult technique and an enthusiasm which shrank from no pains in its devotion to the aim pursued. In exceptionally wide touch with the various paths along which modern neurology is advancing, with unsurpassed knowledge of the literature of his subject, he had a gift of criticism at once sympathetic and keen, and a native power of lucid exposition. He seemed, indeed, marked out to be a teacher whose personal qualities would attract to him as years went by an ever-increasing group of advanced students and research workers of the best type. The place which he had made for himself in British neurology will always be remembered.

A Friend sends us an appreciation of Dr. Page May from which we quote: For some months in 1888 I met May regularly at Moorfields. Our next association was at the Queen Square Hospital in 1890, just before he delighted us all by winning the M.D.London Gold Medal. It is not necessary for me to dwell on the many acts of devoted kindness and encouragement which he ever lavished on me. After his final leaving of Egypt he began those superb courses of lectures at University College on the anatomy and physiology of the nervous system. He gave six courses, and I attended them all. If Great Britain possesses an anatomico-physiologico-neurological lecturer to compare for a moment with May, where is he hiding? Who knows better than I do by personal experience the width of May's comparative neurological knowledge, the splendid accuracy of his retentive memory, his ease and lucidity, his beautiful presentation of both the easy and the difficult problems of neurology? As special examples of his skill I should select his lectures on (1) The Optic Thalamus; in his third lecture last summer he surpassed himself on this topic, and I was eagerly looking forward to hearing him in this coming summer on the recent work of Dr. Sachs (*Brain*, 1909); (2) the Cerebellum; (3) Dr. Head's work on the peripheral sensibilities and the afferent paths; (4) many of Professor Sherrington's researches. On the first and last lecture he used to come up to greet me on the back benches; his greeting was always the perfect one described by Macbeth: "Bear welcome in your eye, your hand, your tongue." Observe the order. He used then to ask me the rather awkward question, "Is this what they (the audience) want?" He knew that I had talked with hundreds of practitioners from all parts of the world at a certain neurological hospital. All I could answer was that it was just those elements of neurology—the true fundamentals of neurology—which he put so clearly, that were what all of us needed above all things. His exceptional knowledge is illustrated by the following incident: One day I asked a neurological friend of exceptionally wide range of knowledge a certain point about the centrifugal fibres in the optic tracts. He said to me: "X., you will keep me awake at nights if you ask me such questions." I then replied that I would ask May. "Oh!" said he, "May is a walking encyclopaedia." The last occasion on which May and I spoke together was a few weeks ago at the end of one of Professor Elliot Smith's lectures at the Royal College of Surgeons. He gave me the invariable old greeting, and asked affectionately after my health. I expressed my joy at his recent domestic happiness, and he said these memorable words: "I think it will come right this time, X." And indeed it has for him—but for us? Even now in my northern suburban home, so near to that place of sadness where this afternoon many of us who loved and valued him shall meet at his funeral, I hear his voice calling to all of us in those ouching words of Hamlet: "If you love me, hold not off."

## STANLEY BEAN ATKINSON, M.B., LL.M., J.P.

We regret to announce the death of Dr. Stanley Bean Atkinson, which took place on January 18th, at the age of 36. He worked very hard in Mile End during the election, and it is believed that his efforts on the occasion laid a strain on his heart which proved fatal. Dr. Stanley Atkinson had a promising career before him. He gained a junior entrance scholarship at St. Bartholomew's in 1892, and a junior scholarship in anatomy and physiology in the following year. In addition to the diplomas of the Conjoint Board for England he held the degrees of M.B., B.Sc.Lond., and M.A., LL.M.Camb. He was a Barrister-at-Law of the Inner Temple, and a J.P. He was formerly Honorary Secretary of the Medico-Legal Society, and was for a time editor of its *Transactions*. He was a member of the Romilly Society, of the Society for the Study of Inebriety, and of other bodies for the promotion of matters relating to the public welfare. For three years before his death he had represented the Midwives' Institute on the Central Midwives Board. He was also a member of the Stepney Borough Council, and represented the Mile End Board of Guardians on the Metropolitan Asylums Board. He was to have stood for Mile End as a Progressive candidate at the forthcoming County Council election. Dr. Stanley Atkinson was the author of *Golden Rules of Medical Evidence* (1906); *The Office of Midwife* (1907); *The Law in General Practice* (1908). He also contributed an article on Life, Birth, and Live Birth to the *Law Quarterly Review* (1904); one on Forensic Physiology to the *St. Bartholomew's Hospital Reports* (1904); and others on the Medico-Legal Relations of Intemperance to the *Edinburgh Medical Journal* and the *British Journal of Inebriety* (1905); Definitions of Accident to the *Law Magazine and Review* (1905); and Tuberculosis under the Poor Law to the *Journal of Tuberculosis* (1908).

Sir William Collins, M.P., writes: I should like to add a line or two of my personal testimony to the great worth of the late Dr. Stanley Atkinson, whose untimely death has cut short a life of greatest promise and full of good works. He was one of a band of younger medical men with whom I have been brought in contact whose horizon of duty was not limited by narrow professionalism. He had a stern feeling of duty within him urging him to use his great powers of heart and head for the succour of his fellow men. Keen pathologist and well-read jurist as he was, and as his contributions to the Medico-Legal Society—of which he was Honorary Secretary when I was President—prove him to have been, he had yet a wider outlook as a sociologist, practical as well as theoretical, and he spared neither pains nor his own health to use his position as guardian, borough councillor, and justice of the peace to humanize and elevate the life of East London in which he lived and moved and had his being. Ascetic and severe towards himself, he was indulgent and sympathetic to others, especially the less fortunate others, of whom hundreds called him friend. Keen politician, yet undebased by the sordid side of politics, he lived as ever in the Great Taskmaster's eye, and he died a victim to self-imposed work. Original, gifted, and cultivating his own selfhood, he yet was the most unselfish of men. As our profession would have been enriched by the mature development of such a nature, it is indeed poorer by the premature termination of so promising and precious a life.

# Public Health AND POOR LAW MEDICAL SERVICES.

## VITAL STATISTICS IN ENGLAND AND WALES (1909).

WE are indebted to the Registrar-General for the following rates, compiled and published for the convenience of medical officers of health. The figures are provisional and subject to revision.

ENGLAND AND WALES.

*Annual Birth-rates, Death-rates, and the Death-rates from the Principal Epidemic Diseases.*

| | Annual Rates per 1,000 Living. | | | | Deaths under One Year to 1,000 Births. |
|---|---|---|---|---|---|
| | Births. | Deaths. Crude. | Deaths. Corrected* | Principal Epidemic Diseases. | |
| England and Wales | 25.6 | 14.5 | 14.5 | 1.12 | 109 |
| 75 great towns ... | 25.7 | 14.7 | 15.6 | 1.42 | 118 |
| 143 smaller towns ... | 24.8 | 13.9 | 14.5 | 1.08 | 111 |
| England and Wales less the 219 towns | 25.6 | 14.5 | 13.6 | 0.80 | 98 |

* The corrected death-rates are the rates which would have been recorded had the age and sex constitution of the populations of the several areas been identical with that of England and Wales as enumerated in 1901.

## DISTRICT MEDICAL OFFICERS AND SCHOOL CERTIFICATES.

A POOR LAW medical officer in a country district informs us that a letter has recently been addressed by the instruction of the county education committee to the guardians of the district calling the attention of the board to the fact that in its district parents of children who are being treated by the Poor Law medical officers are not able to obtain a certificate of the sickness of their children. The letter goes on to refer to "the decision of the Local Government Board, that under Article 205 (3) of the General Consolidated Order a parent can require a certificate of the sickness of his child when attended by the district medical officer." The letter concludes by asking the guardians to inform the education committee whether they will instruct their medical officers to give certificates to the parents in cases where the children are receiving treatment.

So far as we are aware this suggestion involves a proposal to put a new duty on Poor Law district medical officers. The following is the text of Article 205, paragraphs (1), (2), and (3) of the General Order (Consolidated), of July 24th, 1847, and we reproduce a footnote to number (3) from the eleventh edition of Glen's *Poor Law Orders*:

DUTIES OF A MEDICAL OFFICER.

Art. 205.—The following shall be the duties of every medical officer appointed by the guardians, whether he be the medical officer for a workhouse or for a district:

(1) To give to the guardians, when required, any reasonable information respecting the case of any pauper who is, or has been, under his care; to make any such written report relative to any sickness prevailing among the paupers under his care, as the guardians or the commissioners may require of him; and to attend any meeting of the board of guardians when requested by them to do so.

(2) To give a certificate respecting children whom it is proposed to apprentice, in conformity with Arts. 59 and 61.

(3) To give a certificate under his hand in every case to the guardians, or the relieving officer, or the pauper on whom he is attending, of the sickness of such pauper or other cause of his attendance, when required to do so.

The footnote is as follows:

That is, when required to give such certificate by the guardians of the union of which he is an officer. It is optional with him to give the certificate to boards of guardians or relieving officers of other unions. The certificate need not be in any particular form. It will suffice if it be in the form in which ordinary medical certificates are usually given. If the medical officer be summoned to attend a justice when he makes an order for the removal of a lunatic to an asylum under 53 and 54 Vict., c. 5, s. 16, the case will not be within this regulation. Apparently the regulation will include a certificate of illness in the case of a member of a benefit club, where the medical officer may attend in sickness on a pauper, if such a certificate be required of him by the guardians, or the relieving officer, or the pauper. It forms no part of the official duty of a medical officer to attend the justices to prove that the sickness or disability of a pauper is likely to produce a permanent disability, so as to render such pauper removable to the parish or union of his settlement under 9 and 10 Vict., c. 66, s., 4; 28 and 29 Vict., c. 79. He must be summoned or subpoenaed to attend before the justices the same as any other witness whose evidence is necessary, and he will be entitled to be recompensed accordingly for his attendance.

Under Art. 205, No. 3, it will be the duty of a medical officer of a union or parish in the etropolis to give certificates for the admission of paupers into the Leavesden and Caterham Asylums. See Art. 5 of the regulations issued to these asylums on October 6th, 1870, *post*.

The certificates to which the application of the Education Committee refers are not required for the use of the guardians to enable them to carry out any of their special duties, but are required by another body—namely, the education authority, which has different duties to perform and has special funds at its command for the discharge of such duties. We therefore fail to see that medical officers of the guardians can be called on to certify as suggested by the education authority.

## NOTIFICATION FEES.

A RESIDENT medical officer of a union infirmary can claim a fee from the urban district council in which the infirmary is situated, for notifying cases of infectious disease which occur in the infirmary and which are treated in the infirmary.

# The Services.

## TERRITORIAL FORCE.

NURSING SERVICE.

MISS SIDNEY BROWNE, R.R.C., has been appointed Matron-in-Chief of the Territorial Nursing Service. The full establishment of the service is 2,783, and the number already enrolled is 2,570. Twenty-three general hospitals of the Territorial Force have been organized, and the staff of each consists of a principal matron, a matron, 22 sisters, and 68 nurses, that is to say, 92 altogether; to make provision for the fact that at the moment of mobilization the whole staff might not be immediately available, the staff to be actually enrolled for each general hospital is 121. At the present time the general hospitals are controlled by the county associations and each has the assistance and advice of the matrons of the principal hospitals in each area.

An Army Order issued recently with regard to the appointment of Matron-in-Chief Territorial Nursing Service contains the following: "The Matron-in-Chief will not be called up for duty in time of peace, but will be required to make herself acquainted with the organization of the service, and should be a member of the Advisory Council. She may be called up for duty on the embodiment of the Territorial Force. In the event of the Matron-in-Chief being called up, she will be on the staff at head quarters, and will be required to exercise general superintendence; to co-ordinate the administration of the nursing service in the various hospitals of the Territorial Force, and will be responsible for the general efficiency of the nursing service."

Every nurse enrolled is required at the beginning of each year to report to the principal matron of the Territorial hospital to which she is attached; inquiries are made as to the nurse's fitness for duty, and the nature of the work she has been doing during the preceding twelve months, so that any who show signs of physical incapacity, or who have specialized to a degree which would interfere with their usefulness for the Territorial nursing service are replaced by others.

Miss Browne, who is a sister of Dr. Langley Browne of West Bromwich, has had a long experience of army nursing. In 1884-5 she was with the Suakin field force, and was subsequently superintendent of nurses in turn at Malta, the Curragh, the Herbert Hospital, Woolwich, and the Connaught Hospital, Aldershot. During the South African war she was matron successively of General Hospitals 3 and 12. At the close of the war she was appointed matron-in-chief of Queen Alexandra's Imperial Military Nursing Service; when she took up the duties she found a staff of 87 nursing sisters; when she retired four years later there were 400. In 1902 the King conferred the decoration of the Royal Red Cross upon her, and she also holds the Egyptian medal and clasp, the Khedive's star, and the King's and Queen's South African medals.

## R.A.M.C.(TERRITORIAL).

PAY IN CAMP.

L. P. D.—The pay of a major R.A.M.C.(T.) in camp is £1 3s. 6d. a day; after three years' service as such it is £1 6s., with allowances according to Class 9.

MR. W. H. LEVER has been elected Chairman of the Liverpool School of Tropical Medicine in the room of the late Sir Alfred Jones.

THE annual dinner of the West London Medico-Chirurgical Society will be held at the Hotel Great Central, Marylebone, on Wednesday, February 16th, at 7.30 for 8 p.m.

WE regret to have to announce the death of Mr. W. W. Wagstaffe, formerly Senior Assistant Surgeon and Lecturer on Anatomy at St. Thomas's Hospital, who was compelled to retire from that position many years ago owing to ill health.

AT the meeting of the Pharmaceutical Society of Great Britain, to be held at 17, Bloomsbury Square, W.C., on February 8th, Mr. C. A. Hill and Mr. J. C. Umney will read a paper on the essential oils of the *British Pharmacopoeia*. Medical friends and members will be cordially welcomed.

# Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

## QUERIES.

A. L. desires to hear of a school, private or otherwise, where special arrangements are made for the reception of boys suffering from ringworm of the scalp.

### Recurrent Mastitis.

P. asks for advice in the treatment of an unmarried woman, aged 38, of nervous temperament, who has suffered for a year from diffuse mastitis in one breast with induration, pain, and enlargement. At the menstrual periods, which are attended by pain for three days, the gland becomes swollen with tensive pain and an evening temperature of 101°-102°. After the period the swelling diminishes. Belladonna internally and externally, potassium iodide, iodized vasogen, strapping with mercurial ointment and bandaging have been tried without benefit. If the affected breast is removed what is the chance of the disease beginning in the other, which is at present normal?

### Manurial Value of Dry Earth from Closets.

Reform writes: As the question of the introduction of a dry earth system for the town of 2,000 inhabitants in which he resides is to be laid before the town council at an early date, he desires information as to the value of human excreta to farmers for use as manure, compared with other kinds of manure used. I am, he adds, led to believe that in some towns where the dry earth system is in use farmers are willing to cart away the contents of privies at a small cost to the owners of houses. What I would like to know in particular is the "relative" value of human excreta to the ordinary manure generally used by farmers.

### Cottage Hospitals.

J. F. C. asks for information from members who have had experience as to the cost per bed for erecting a cottage hospital to provide four to six beds and the cost of maintenance or other advice on the subject.

*** Some information on the subject will be found in the article by Mr. Percy Adams, F.R.I.B.A., published in the British Medical Journal of June 20th, 1908, p. 1476 et seq. It is there stated that the new building recently erected for the Cranleigh Cottage Hospital contains two wards each 23 ft. by 14 ft. and holding four beds. The total cost of the new block was about £1,800, but the old building in which the hospital was originally started was retained to serve as an administrative block. The last edition of the book on *Cottage Hospitals* by Sir Henry Burdett was, we believe, published in 1896 (London: The Scientific Press. 10s. 6d.)

## ANSWERS.

A. H. G. should state his opinion clearly and forcibly to the patient himself, but should not give information to others without the patient's consent.

### Pruritus In Glycosuria.

M.D.Glasg. writes: "Nemo" will find the vacuum electrode attached to the top of the solenoid of the high-frequency apparatus a certain means of relief, if not of cure, in cases of glycosuric pruritus vulvae. The movable contact should be attached to the sixth, seventh, and eighth ring of the lower solenoid. A few daily applications of fifteen minutes' duration will suffice.

### Psychiatric Terminology.

G. D. is not likely to find in the medical dictionaries he has named, both compiled before the year 1897, the terms he has selected from Dubois's *Pathogeny of the Neurasthenic States*, as nearly all are of later date. The precise date of the coinage of all of them we cannot give. "Catatony" or "catatonia" appears to have been first used by Kahlbaum, while "psychasthenia" came into general use after the publication of Raymond and Janet's work on the subject. All the remaining terms (aboulia, algogenic, dynamogenic, ponogenic, ponophobia, and psychoneuroses) are, with the help of a Greek lexicon, self-explanatory. Ponophobia and ponogenic (*ponos*=toil) are new to us; as are also "dynamophanic" and "thanatophobia" (*thanatos*=death), not quoted by "G. D.," but contained in Dubois's book. These, however, are mere trifles when placed besides the welter of wild and whirling words which appal the modern student who approaches the study of psychiatrics. Such, to take only a few examples, are aichmophobia, ereuthophobia, rupophobia, taphophobia, siderophobia, oikophobia, dysmorphophobia, belenophobia, eremnophobia, potamophobia, and even the siderodromophobia, or fear of steam-engines of Riegler. "G. D." will find psychasthenia and catatonia adequately described in almost any modern textbook on nervous and mental diseases.

## LETTERS, NOTES, ETC.

Dr. J. Q. Donald, of Invereden Lodge, Dairsie, N.B., informs us that the county council of Fifeshire has granted to him a licence under the Inebriates Act for ladies only.

### "Medical Missionaries."

In an account of the annual report of Livingstone College, which appeared at page 9 of the issue of the British Medical Journal for January 1st, the term "medical missionary" was inadvertently used in a sentence describing the way in which the students of this college obtained some knowledge of minor surgery. The phrase did not appear in the report itself, and we have reason to believe that it is one intentionally avoided by the principal of the college, Dr. Harford; he does not wish that the missionaries for whose education in matters appertaining to health he is responsible, should either be regarded by the public, or regard themselves, as anything more than missionaries who have acquired such an amount of medical knowledge as may help them in safeguarding their own health and that of their followers, and enable them to attend to minor ailments when qualified medical aid is not obtainable. All the students of the Medical Missionary Association of London (which is distinct from Livingstone College) and of the Edinburgh Missionary Society, pass through the full five years' curriculum and obtain registrable diplomas in the ordinary way, and the title "medical missionary" should be confined to persons who take this course.

### The Morphine Habit.

Dr. Oscar Jennings (Le Vesinet) writes: In a recent notice of my book on the *Morphia Habit* your reviewer points out that one of the cases "referred to shortly" is described as suffering from "hepatic paludic neurasthenia." This, he adds, "sounds very terrible, but . . . it is not to be found in the official *Nosology of Disease*." Will you allow me to say that the diagnosis referred to was not my own? The case is quoted from another writer, and, although its nature is quite comprehensible, I called attention to the somewhat unusual terminology by quoting it myself between inverted commas. It was probably the literal translation of the French equivalent, but of this I am not sure, as I only saw an article in an English reprint. The case was, however, related by Glenard, who is a considerable authority on liver affections, and is of great interest as showing the value of Vichy water by hypodermic injection in drug weaning.

### An Effect of Coffee.

M.D., D.P.H. writes: Perhaps my personal experience with coffee may be of interest to some of your readers who may be suffering, as I was, from its effects without knowing their cause. Some sixteen years ago, while in New York, I had occasion to travel each morning after breakfast a few miles by rail, and my journey was embittered by a sensation of excited depression, if I may use such a phrase, by which I mean an inclination to be physically active combined with an uneasy feeling which amounted at times to a dread of losing mental control. At other times, later in the day, and even at night, a similar unhappy mental condition overcame me, so that I could not sit still in a public building, such as a concert room or a church, both of which I have had to leave on account of a sense of insecurity that I might fall from a gallery or in some other way lose my control. My only security lay in not letting my fancy or imagination work. On one occasion, not long ago, when swimming in the middle of a lake the depth of the water suddenly occurred to me, and I had at once to make for a boat because I felt as if I should lose my powers of locomotion. I may say that I am not a specially nervous individual, and have an ordinary healthy body and mind. It was not till comparatively recently that I discovered the cause of the trouble I have tried to indicate. While I have it under no other circumstances, I can bring on this most trying and unpleasant condition at any time by coffee taken for a few days continually, say, a breakfast cup and a half, or even less, of *café au lait*, or by an extra large dose of it. I have in recent years been observing its effects on others, with the result that I think it likely that many people are doing themselves a considerable amount of harm by drinking coffee, which, while an excellent stimulant when taken occasionally as such, seems to be a powerful poison to the nerve centres. I have not been able to assure myself that tea is so harmful.


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